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ABSTRACT

Concurrent with a needs assessment and community input study, a research team undertook two behavioral science research efforts. The first was an identification and examination of the influence network through which local leadership was organized. The second was an examination of how those who constituted the network of policy-making influentials perceived the education system. Throughout this year-long period, the research team and the group doing the needs assessment observed each other's activities and consulted on the meaning and impact of the way their efforts impinged on each other. The two major chapters of this document are concerned with influence analysis and cognitive mapping. Both chapters use the same format--the concept and background of the research is presented, the methodology and the nature of the results this strategy provides are explained, the results of the research from Port Angeles are presented, and the applicability of the findings in the community are examined. Conclusions and implications are drawn in the final chapter. (Author/IRT)

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An Innovative Approach to Community Intervention: Influentials Charting, Cognitive Mapping, and Community Development

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Erratum

page 6, third paragraph, following

There were reasons to hold some reservations about this "two

insert

track" strategy in the beginning. Initially,

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Chapter I

INTRODUCTION

These are times when, for reasons that are not at all clear to most of us, the urban place--that mundane and widely relied upon engine of our society--has come upon unexpectedly intense levels of difficulty. This nation is built around the social productivity of this elaborate social mechanism. Its capacity to produce such ordinary goods and services as fresh water and public transportation has been taken for granted over the whole of the two centuries of our national existence. To these we have now added a lengthy inventory of claims. So deeply seated are our expectations toward it that even though the so-called urban crisis has been with us for almost two decades, we are still not quite able to come to terms with the possibility that we may have to modify our conception of what a city is and what it can accomplish in light of the basic changes taking place in our society as a whole.

Community development is a familiar way of attending to some familiar dysfunctions that disrupt the orderly flow of urban services. The Division of Community and Organization Development of the University of Washington, under whose auspices the studies reported here were carried out, has been engaged in helping revise the tangled skein of urban concerns for over a quarter of a century. Its services have been sought out by virtually every city in the state; many communities have returned to seek out assistance numerous times. The generally high quality of local government across the State of Washington indicates that these efforts have not been without effect.

Still, no one familiar with the local scene would deny the existence of some nagging, intractable difficulties which prejudice the public's confidence against local government's viability as a productive mechanism. We should now like to turn to the nature of some of these difficulties.

CHANGING CHARACTER OF URBAN PROBLEMS

One of the most striking ways of coming to an appreciation of the nature of the difficulty in which the modern urban center finds itself is to compare the kinds of things that the University's consultants did in the name of community development a quarter of a century ago with what they are called upon to do today.

Establishing parks was almost a fad in the years immediately following World War II. It appears that it was not merely the urge to

beautify the environs and break the surge of housing development that led many cities to turn in this direction in the early fifties. One suspects that in some of these places the opening of a park in or near the city center came to signify some of what the Boston Commons has represented for more than two hundred years; that one of the higher expressions of community is to share a pleasing, congenial open space with others who reside in the urban place where one makes his or her home.

Not a few communities involved themselves with more mundane improvements; extending sewer facilities, improving sewage lines, installing treatment plants and improving water systems all caught the interest of many smaller communities. Interestingly enough, many larger cities were undertaking more dramatic enterprises, such as public housing, for which they hired professional planners and program managers. This tended to lead many of them to a lessened interest in citizen-initiated programs of change.

What stands out as one reviews the reports of these early efforts is that they were project-oriented. A community came to the campus seeking assistance in dealing with its problems and the consultants spent from six months to a year working with voluntarily staffed citizen groups which were quite pleased with themselves if they identified a particular project that needed to be undertaken and then launched it. Putting sidewalks and curbs in, surfacing graveled streets, adding a library to a school, installing new and more powerful street lights--these were all looked upon as useful and meaningful things to do in the name of civic improvement. A city that could move through a series of such projects over a period of three to five years could hope to achieve enough recognition to be considered an All-American City.

Dominating almost everything the Division has done in the past few years is a very different kind of concern--participation. Organizing neighborhood councils illustrates an explicit and concrete thrust toward increasing citizen involvement; holding workshops and conferences to discuss the dynamics of participation reflects attempts to come to a better understanding of what the role of the responsible citizen shall have to become in the contemporary urban center. And surrounding many of these attempts to recapture a diminished sense of civic involvement is a cloud of not merely ambiguity but uncertainty. Again and again, as if someone were moving from city to city implanting a single refrain, one hears the same questions, "What has happened? What has gone wrong? How did we ever get ourselves in a predicament such as this? Who is at fault?

Like the parents of the proverbial teenager, city fathers have had the experience of suddenly discovering that they do not fully understand a place with which they have become so completely familiar that they have to stop and consciously assert their perplexity about why programs of action have come upon such troubled times. It is then that an

all too common dynamic is activated; confusion degrades into frustration, frustration erupts as fault-finding, and what is inherently a matter for clinical judgment emerges as a conflict between personalities that does little more than distract those interested in solving a problem from its generic nature and intrinsic causes. "Oh, for the day when a well-conceived, well-done project would ameliorate our difficulties," might very well be the lament of those who have struggled through a long and cumbersome assessment of the local situation only to find that there is not that much that the residents of the community can do about some of their most pressing problems. Initiatives have tended to migrate elsewhere, especially to federal and state agencies.

It was in the spirit of seeking to discover ways of equipping local leaders and their constituents with more penetrating modes of analysis, more powerful ways of probing for underlying causes, that this attempt to harness customary ways of facilitating community development with well-established ways of researching the urban scene was conceived.

NEED FOR NEW RESPONSES

Those whose business it is to study the turbulent urban scene have been saying for some time that cities have become much more complex places than most of us understand them to be. It is not merely that we need to develop new ways of dealing with urban problems; we need to realize that we shall have to fashion new ways of coming to understand our difficulties before we can really come to grips with the challenge of forging more elaborate responses to them.

It is to this challenge, that of developing more potent ways of analyzing our civic difficulties, that this attempt to fuse research and consultation into an integrated process is directed. It has long been an article of faith in this country that if you assemble a sturdy set of local residents and work with them over a period of time, their common sense will assert itself as collective judgments about what their real problems are. Once they know what they are really up against, so the saying goes, Americans can be counted on to get the job done. It is toward expanding, and deepening the understandings upon which these discussions are based that this experiment in teaming science with proven and practical procedures for facilitating a collective diagnosis of local difficulty was aiming as this project took shape in the spring of 1974. The experiences of those working out of the Division of Community and Organization Development had pointed toward the need for equipping local residents with a better understanding of the dynamics operative in local programs of action, such as education, which sometimes become so convoluted as to be literally incomprehensible to them.

One must hasten to add that this is not to suggest that there was an unwillingness to strive for understanding on the part of local leaders. What seems to be the difficulty here has some of the nature of an oversight. It often seems as if those who live in a community do not think to look at some of what they could see almost at will. Familiarity breeds contempt, the old saw goes. In this instance, it may be that familiarity is an antecedent to something having the nature of oversight, disregard or incomprehensibility.

Science has long been an appropriate antidote for precisely this kind of malady; for science, so that saying goes, is nothing more than an elaborate way of demonstrating the obvious. In initiating this project, the Division sought to explore the possibility that conclusively demonstrating that which had disappeared into the forest of details enveloping a program of action would provide a critically important kind of delineation of some underlying forces that need to be dealt with in coming to terms with difficulty.

BACKGROUND AND CONTEXT

During the one year period, July 1, 1974, to June 30, 1975, the Division of Community and Organization Development of the University of Washington conducted a community development project with School District #21 in Port Angeles, Washington. Port Angeles is a city of 15,000, located on the north end of the Olympic Peninsula, approximately 75 miles northwest of Seattle, Washington. Its primary industries are paper and wood product manufacturing and tourism.

This community development project was supported by a grant under Title I of the Higher Education Act of 1965, through the Office of Education, U.S. Department of Health, Education and Welfare. The project, called the Community Development Action Program, had two parallel thrusts: (a) a needs assessment and planning effort aimed at increasing citizen input into educational policy-making and (b) a behavioral science research project focusing on the influence and policy-making structures within the education system. The needs assessment project was directed by staff of the Division of Community and Organization Development, Daniel Shannon and Patricia Shiner. The research effort was directed by the authors, primarily Dr. Redfield, with Edmond Gore serving as a research assistant. The primary objective in launching this twin pronged effort in the community was to allow for a retrospective assessment of the potential use of the research activities, and their results, by community development consultants in helping those in the community to understand and deal with some of the larger dimensions of program change associated with such local programs as education. This monograph will report the theory, the methods, and the results of the research that was conducted and its

relationship to the aims of community development and social change.

DIVISION OF COMMUNITY AND ORGANIZATION DEVELOPMENT

The Division of Community and Organization Development at the University of Washington is part of the Office of Continuing Education. The staff is constituted of a director, an assistant director, and a number of consultants. The Division has historically been a means by which the University attempts to respond to calls for assistance by communities in the state. It represents a way of bringing the expertise centered at the University to bear on local situations. Its activities, by contrast with those of private consultants, stress improving the coherence of local leadership and the policy-making skills of community leaders--as opposed to providing specific solutions to concrete problems. Over the years, the Division has developed strategies for helping local groups of citizens to organize themselves to undertake policy studies, conduct surveys of local attitudes, analyze and plan lines of action, and undertake to implement plans through activities defined and directed by the citizens themselves. This approach has focused on the community as a whole and stresses local initiatives in response to locally defined needs and goals. Over the last four years, the Division has also been developing a capability to probe into specific issue areas and program sectors. The project in Port Angeles, which dealt only with education, is an example of this emerging direction in the Division's orientation.

At the request of both the school district administration and the citizen advisory group, the Division staff set about to organize community members to undertake a needs assessment and planning activity aimed at providing school district leadership with input from the community on school policies and programs. These efforts soon consumated themselves in a collective decision to organize a series of community meetings open to all community members and defined according to the attendance areas for the elementary schools in the district. At the first set of meetings, a list of goals for the education system was arrived at through the use of the Phi Delta Kappa Goal Setting Process. At a second set of community meetings, a list of educational needs was developed using the nominal group technique. At the conclusion of the second set of meetings, representatives were chosen from each of the attendance areas to constitute a district council. This council undertook to examine and consolidate the data from the various area meetings.

The district council delineated five general areas of concern for the education system in Port Angeles. These were personnel, student/teacher/parent relations, finance, physical plant, and curriculum. The district council then set up five task forces to deal with these five areas of concern. People who had been participating in the community

meetings were asked to affiliate themselves with one or another of these task forces.

The expanded task forces set about to clarify and consolidate the needs assessment statements in their area and to carry on fact finding sessions with the administration and staff of the school district. The results of the task forces' efforts was an overall report to the school board elaborating in some detail the areas of concern with which these citizen groups felt the school board should deal. The school board reviewed the material and referred part of the report to the school district administration for study and action, kept part of the report for continued board examination and referred part of the report back to the citizen's groups for study and recommendations. There were two task force groups operating in the community at the beginning of July 1975, pursuant to the school board's request. These groups were receiving continued support from the Division staff, which was also continuing its efforts to provide support for the citizen-manned neighborhood groups.

During this same period, the research team undertook two behavioral science research efforts. The first was an identification and examination of the influence network through which local leadership was organized. The second was an examination of how those who constituted the network of policy-making influentials perceived the education system; how, the study queried, does the program fit together, how do components perform various functions in behalf of a total effort? At the end of each phase of the research, researchers conducted feedback sessions with the community members, carefully going over the results and their implications. Throughout this year-long period, the research team and the Division staff observed each other's activities and consulted on the meaning and impact of the way their efforts impinged upon each other. The key questions were "Would the research process, its results and their feedback help the Division staff to better perform the activities they were engaged in?" "Were there things the research would enable them to do which they were not ordinarily able to do for a community?"

There were reasons to hold some reservations about this "two there was some question as to whether one actually might <u>disrupt</u> the other. Even if they turned out to be complimentary, as was hoped, how should they be coordinated? At what point should the two research probes be activated? Would the most effective strategy be to conduct the research and then engage in the development activities? Should they be undertaken at the same time? How should they be staged if they were to be paralleled?

Not having the answers to these questions at the beginning of the project, the Division staff and the research team settled upon a contingent approach; the research would be initiated shortly after the development process was under way and then there would be periodic assessments as to how well this was serving the community.

This monograph presents, in the spirit of the project launched in Port Angeles, an examination of how these parallel efforts undertaken in behalf of the education system there might be applicable in other communities.

Chapter II

INFLUENCE ANALYSIS: THE IMPORTANCE--CONTACTS RESEARCH

The process of applying behavioral science research to local programs of action takes place through the collection of two types of data. The first is the importance and contacts data which is discussed in this chapter. The second is the cognitive mapping data, which is presented in the next chapter. Both chapters will use the same format. First the concept and background of the research will be presented. This is followed by a presentation of the methodology and the nature of results this research strategy provides; then the results of the research from Port Angeles are presented. Finally the applicability of the findings in the community will be examined.

THE CONCEPT AND BACKGROUND OF THE IMPORTANCE AND CONTACTS RESEARCH

The Concept of the Research

The researcher as an outsider and a newcomer to the community in which he seeks to collect data faces much the same situation as does the new teacher who is beginning his career. The beginning teacher will know little of the socio-political aspects of his profession and little of how the education system fits into the community. Only through living and working in the community does he begin to understand how the people who man the various parts of the program sector fit together. The most successful participants in the program sector will have, through time and experience, grasped how the influence and communication networks of the program sector operate within the norms, values, and folkways of that community. Some people will not be interested in the decision-making process; others will. In time, those interested will become privy to the experiences and information necessary to understand how the program sector actually operates at the policy-making level.

For the researcher who seeks to understand the form and structure of influence within a program sector and then to transfer that knowledge back to the community the problem is not desire or interest; the problems are time and access. He must find a way to compress the time required for this learning process into a brief period to gain access to the inner workings of the program sector. The influence--contacts research was developed to provide access to insider's knowledge about

influence and communication patterns within the program sector and to accomplish this in a relatively short time.

The Importance--contacts research is designed to tap the perceptions that community members hold about who is pivotal in the program being studied (such as education) and how they come into contact with the others who are part of its leadership. From this data a series of individual and aggregate influence and communication linkages in the program sector can be identified. These linkages are then analyzed and the results are shared with the members of the community. The basic unit of data is the perceptions of individuals about who is influential in the program sector and how often they come into contact with other people in the network of influentials. No assumption is made that these perceptions mirror reality, though those of the more informed and active respondents may be quite accurate. Rather it is assumed that these perceptions constitute a context, a definition of "how things are," which the individuals use to make sense of events and actions, to anticipate outcomes, and to shape their responses to those actions and outcomes. The analysis of the data provides the researcher with influence and communication patterns from which a picture of the network of policy-making influentials can be developed. This enables the researcher, in a true sense, to view the program sector as an active, salient person in the community would view it. In addition, because the researcher is able to draw on the perceptions of a larger number of community members, he obtains a more comprehensive view of the program sector than that of any single community member.

It is also useful to contrast the position of the researcher using the methodology relied upon in Port Angeles with that of the participant observer. The researcher who seeks a participant observer status in a program sector wants to obtain an "insider's" view, just as does the researcher who relies on the Importance--contacts research. If the participant observer is successful he will come to share understandings about the program sector with the members of the community. But his understanding will not be systematic, scientifically based, or comprehensive, while those of the Importance--contacts researcher will be. Of equal importance, the Importance--contacts researcher has an independent status which allows him to use his information in ways that are denied the participant observer. This is because the participant observer has to accept the norms and values of the community in order to gain access to the community. The conditions of his status then become constraints on his actions because his access and legitimacy can be withdrawn and the validity of his perceptions denied by those in the community. The Importance--contacts researcher who gains his information through a systematic application of behavioral science is in a significantly different position. He uses his science to gain access to the community and his results are based on what people in the community say about themselves. This becomes critical when the focus shifts from the gathering

and analysis of data to some type of application on behalf of the community members.

Background: Importance--Contacts Research and "Community Power"

The specific methodology used here is an attributional methodology. The data consists of what the respondents to the research instrument attribute to others in the community concerning who is influential in the program sector and how frequently they come into contact with others in the sector. The basic research instrument is a list of names of people in the community who are assumed to be active and/or salient in the program sector being studied. The general form of this methodology has been used to study communities for over 20 years, dating back to Floyd Hunter's seminal study, Community Power Structure.

Over the years a debate has raged over the "best" way to study decision making in communities and individual program sectors. The code phrase for this set of concerns is "community power." Three principal positions or "approaches" can be identified. An approach as the term is used here signifies both a theory and a methodology for the study of decision making.

The first approach is associated with Hunter and is often called a "reputational" approach, although the term used here, attributional, is more accurate. The second is associated with Robert Dahl and his book, Who Governs?[2] This approach is often called a "decision-making" approach. The phrase "issue resolution" is more descriptive of the focus of this approach, however. The third approach is associated with the work of Bachrach and Baratz and their book, Power and Poverty.[3] This approach is often called a "non-decision-making" approach. Again an alternative phrase, the "context of issue processing," is more accurate. The debate over how to study community decision making involves methodological, substantive, and normative issues. This community power debate is of great scientific interest and importance and those unfamiliar with it may wish to consult these three books.

While the methodology used in the importance--contacts research comes directly from the attributional approach, we make no claim that attributional approach is the best way to study decision making in communities, or that decision making as a whole is being examined by an attributional methodology. Rather we contend that the methodological and substantive parts of the community power debate have been based on too limited a conception of decision making with the result that people have tried to make each of the various approaches do more than they are really designed to do.

Decision making as a whole is a behavioral phenomena which has

both structure and process components. The processes of decision making involve the generation, formation, processing, and resolution of specific issues. These processes take place within a contex of stable structures, such as perception of influence, norms, values, and institutions. These structures give a constancy to social situations. From this perspective each of the three approaches identified above is involved with examining only one part of the whole which is decision making.

The attributional approach focuses on the contextual structures of decision making: the perceptions of community members concerning influence and communication linkages. The issue resolution approach focuses on one of the process phases of decision making. The context of issue processing approach expands the focus of the issue resolution approach to an examination of agenda formation. None of these approaches examines the whole of decision making. The attributional approach focuses on structure and is not a complete examination of even that component; the issue resolution and context of issue processing approaches focus on process and neither is a complete treatment of that part of decision making.

In using an attributional methodology for the importance--contacts research the basic assumption is that the research is tapping the structures of decision making which form a context in which the processes of choice-making take place. The structures being studied are the perceived influence and communication patterns in a program sector. These structures are taken to be necessary, but not sufficient, for an understanding of decision making in the program sector. When the importance--contacts research is placed in this perspective we believe that the major criticisms of an attributional methodology are no longer relevant because they have been largely based on the assumptions made by the attributional approach rather than focusing on an attributional methodology on its own merits.

Background: Fieldsite Cultivation

The data-collection activities which are the focus of this monograph are preceded by an intensive series of site visits and interviews with all sectors of the community. These involve a set of protocols developed by the senior author over the course of a 20-year involvement with community-based research. The concept is to gain as insightful an overview of the community as a whole as possible within the time constraints that will inevitably exist. Much of this fieldsite cultivation activity is the same no matter what substantive area is to be examined by the research. Afternoons spent walking and driving give the researcher a feel for the physical setting of the community. Interviews with people such as elected and appointed public officials, newspaper and radio personnel, the manager of the Chamber of Commerce, the school superintendent,

the hospital administrator, and the head of the local ministerial association provide the researcher with insights into the nature of the community, its culture, its values, and its norms.

The social and physical community are settings in which the local program rests. Much of the meaning of the activities within the local program can be grasped only through a feel for these settings. Too often the desire to get on with taking data or solving problems tends to make what is a necessary prelude to successful community involvement seem to be a luxury. Yet experience with community based research in a number of communities has shown that both a greater insight into the results of the data collection and an avoidance of potential strain between the community and the researcher will result from building a well-rounded understanding of the community and the research project's relation to it through a solid base of fieldsite cultivation.

Background: Research Projects

The Importance--contacts study of the Port Angeles educational system is the third time that an educational system has been studied with this research instrument in its present form. In addition, over the last four years studies of health care systems in four communities have also been carried out using the same research instrument. While the importance--contacts research instrument has remained basically the same in these projects, the analysis of the data has been an evolving process in which new types of analysis and formats for presentation have been developed and new feedback techniques and strategies have been devised during each new study. The primary device for representing individual influence and communication linkages, the molecular chart, was developed during a health care study in 1972-73 and the presentation for aggregate sector influence linkages, the sector chart, was developed during the analysis of the Port Angeles data. Importance--contacts research in Port Angeles is part of a continuing process of the development of analysis, feedback, and application.

THE METHODOLOGY OF THE IMPORTANCE--CONTACTS RESEARCH

Data Collection: Phase One - Judging

The first phase of the data collection--judging--begins by attempting to identify as many people as possible who have been active in some aspect of the program of action being studied over the last year. The key word in the preceding sentence is "active." Operationally, "active" is determined by three measures. First, did the person's name

appear in the local newspaper in the last 12 months in connection with a story about the program sector being studied? Second, does the person hold or has he held in the last two years an official position in an institution or organization related to the program sector? Third, is he mentioned by other people in interviews as being active in the program sector? If a person meets any one of these criteria, his name is placed on the judging list for the program sector. If there is any question, the name is added to the list. In this way a judging list of 350 to 500 names is constructed. This list will contain, with very few exceptions, everyone in the community who is active or salient to the program sector. In addition, those people who evaluate the judging list are encouraged to add names to it.

The next step is to reduce this list so that it includes only the members of program leadership. The names are listed in alphabetical order on a form with spaces left for additional names. On the form each name is followed by two questions which are answered by a group of people chosen to screen the list. These people, known as judges, are selected because of their knowledge of the program sector and their involvement in the programs and institutions of the community. Between 15 and 25 judges are asked to evaluate the list. If the program sector is education, in addition to professional educators, the judges would include representatives of business, city and county government, non-professional education groups, the newspaper and any other institutions and organizations particular to the community being studied. The judging interview is a face-to-face interview. The total interview form may be 15 to 20 pages long and the interview will run from 45 to 90 minutes.

Appendix A contains a blank first and last page of the judging form for Port Angeles and can be referred to. The person doing the judging is first asked to indicate how well he knows a person: (1) "I have not heard of him," (2) "I have heard of him but don't know him personally," (3) "I know him personally." The respondent is then asked to assess the person on the list as being in a (1) core, (2) support, or (3) peripheral position in relation to the leadership and planning activities in the program sector.

The categories of core, support, and peripheral are defined for the person who is judging by showing him the last page on the judging form (Appendix A). It contains a visual representation and a written definition of these terms. Briefly, the distinction conveyed to the respondent is between levels of involvement with the leadership and planning activities of the program sector. A teacher who provides good education in his classroom and is generally active in behalf of the initiatives of others to maintain and improve the education system would fall into the support group. A layman with no educational expertise who is a leader in a citizen's advisory group would fall into the core group. A teacher who only performed the routine requirements of his job and did

not involve himself with any other aspect of the educational system would fall into the peripheral group. The aim of this process is to locate each person on the list in one of these three domains.

The judging forms are scored by assigning a weight of 0, 2 and 3 to the "don't know", "heard of", and "know personally" categories respectively, and a weight of 5, 3 and 1 to the core, support and peripheral groups respectively. The weights from the two questions are multiplied together in order to derive a score for the person from each judge. A person listed as "core" and "know personally" would receive a score of 15 (5 x 3), while a person listed as "support" and "heard of" would receive a score of 6 (3 x 2). All of the scores a person on the judging list receives are added together to reach a total judging score. These scores are then arrayed from the highest to lowest.

The objective of the judging phase is to arrive at a list of the most active, salient people in the program sector, which is also of manageable size. Previous experience with lists of different lengths has shown that 125 to 150 names will comprehend the desired people without making the second data collection task seem overwhelming to the respondent. The problem is to make the list complete enough to perform the research task and still keep it manageable for the respondents. The cutting of the list is done by examining those whose scores leave them in the position of being between one hundredth and two hundredth on the final array from the judging process. If there seems to be a large break in the point totals between number 135 and 136, this becomes a possible cutting point. A second procedure is to go down the list until the names are no longer familiar to those in key positions in the community. Only in rare instances will a person beyond the 130th place on the list be critical to the analysis for cities of the size of Port Angeles. The top 125 people on the arrayed judging list will be included; the question is what other people should be added short of 150 names? The cutting point becomes a somewhat arbitrary decision, but the rule of thumb is to include everyone who might be relevant. Once the judging list has been cut, the second phase of the data collection begins.

The arrayed judging list constitutes a general inventory of which people are considered to be influential in the program sector by a cross section of community leaders. The choice of the persons to do the judging is critical to the quality of the data. However, by using a representative group with multiple respondents from the most salient sectors and by using a final list of over 125 names for a single program sector, the researcher can have a good deal of confidence in the completeness of the list. The final ordering of the list will change when the reduced list is evaluated by those primarily concerned with the program sector and with a different set of questions in the second phase of the data collection.

Data Collection: Phase Two - Importance--Contacts Questionnaire

The second phase of the data collection, the I-C (Importance--Contacts) questionnaire, is built around the list of 125 to 150 names derived from the judging phase. The research instrument for the I-C data collection is typically three pages long. The first page contains questions dealing with the background of the respondent. The second and third pages contain the reduced list in alphabetical order. In front of each name are two blank spaces. Appendix A also contains a blank Port Angeles I-C questionnaire. The two blanks, A and B, by each name on the list are for the respondent's answers to two questions that are put to him about the list of names. He is asked in the "A" column to estimate the frequency of contact he has with each individual on the list in an average month, and in the "B" column to rank in order the ten people he considers to be most likely to influence the character of the program in the future.

The interview is face-to-face. The interviewer explains the questionnaire to the respondent and then waits while the respondent fills it out, answering any questions he may have. This interview takes from 20 to 45 minutes to complete, with 5 to 15 minutes of introduction/explanation and 15 to 30 minutes of actual data collection.

The "A", or contacts, question is explained in the following way: "Estimate the frequency of contact you have with each individual in an average month. By a contact we mean a face-to-face encounter or phone conversation where information is exchanged. The topic of the exchange may not concern (education); rather, it is considered a contact if there was an opportunity to discuss (education) if something were on your mind. Estimate the number of contacts from 0 for someone you don't know, never see or see less than once a month on the average over a year's time, to a maximum of 30, which is the upper limit. For those you have more than 30 contacts with per month, indicate 30 total." The respondent is usually able to complete this question with little trouble and will probably adopt a series of thresholds such as 2, 6, 12 or 10, 15, 20. The result of this question is to have the respondent's estimate of his frequency of contact with everyone on the list. When 50 to 60 interviews have been completed, they will show the respondents' estimates of frequency of contact with each other and the total contacts attributed to any one person by those who are interviewed.

The "B", or importance question is explained to the respondent in the following way: "Construct a list of the ten people in the area of (education) that you consider most likely to influence the character of education in this community in the immediate future; rank them from No. 1 for the most important to No. 10 for the tenth most important. Use your own definition of (education) and select people you feel will have the most impact over the local (education) system over the next 2 to 5 years.

The impact of everyone you rank does not have to be beneficial from your standpoint; what counts is that those you rank are the people whom you believe will have the most impact on the (education) system." The respondents tend to find this question more ambiguous than the first. Completion of the task may be facilitated by having them make a list of 10 to 15 people and then cut it down to 10 and order it. This question gives the respondent's assessment of who he thinks is influential. When the interviewing is complete, data has been collected on what the respondents said about each other and what they said as a group about each person on the I-C list.

The contacts question is scored using the number of contacts each respondent listed for a particular person on the I-C list. If a person is attributed a total of 174 contacts by the respondents to the I-C questionnaire, then that individual is said to have a score of 174 total contacts. The importance question is scored by giving 10 points for a No. 1 ranking, 9 points for a No. 2 ranking and so on down to 1 point for a No. 10 ranking. The total ranking points attributed to a person by all of the respondents to the I-C questionnaire becomes that person's aggregate importance points score.

The first set of respondents for the I-C interview are selected from the arrayed judging list. The top 15 or so people in judging points along with the highest ranked representative of the groups and institutions of the sector, if they do not fall into the first group, are chosen for the first set of I-C interviews. After these people are interviewed their data is scored and 20 or so people ranking high in aggregate contacts and/or aggregate importance points who have not been interviewed are chosen for the second set of interviews. The interview technique is thus a type of "snowball" selection process. The second set of results are scored and added to the first and another set of people are chosen for a third group. This group will also include a set of people about which data is desired even though they do not rank high on either total contacts or total importance points. An example is the city government official in an education or health care study. The final number of interviews will range from 50 to 65 for cities the size of Port Angeles. Somewhere in this range the rank ordering of individuals by importance points will stabilize. Discussion of the way this point is identified shall be picked up later in the discussion of the molecular chart. Once the I-C interviews are completed, the data collection is complete and the data analysis can be undertaken.

Nature and Analysis of Results: #1 Contacts

The I-C data collection yields two sets of data; importance points data and contacts data. This data is analyzed first in its aggregate form, beginning with the contacts data. The I-C data collection

yields contacts data about every person on the I-C list from the 50 to 65 respondents who were interviewed with the I-C questionnaire. The first operation performed on this data is to aggregate the contacts attributed to each individual and then array them from those with most contacts to those with least contacts. This list indicates who are seen by the group interviewed as being the most active in terms of general level of contacts within the network of influentials. This list can be examined from a number of perspectives. The top 50 places on the Port Angeles total contacts array are found on page 34 and can be referred to in order to clarify the points made in this section. By using a cumulative percentage, it can be determined how many people account for 25 percent of the total contacts attributed to everyone on the I-C list by the interview group. This can then be compared with other communities and interpreted as to the effect of size or different institutional arrangements on the character of the network. The occupations of those people who are high or low on the list can be examined and inferences drawn as to the relative salience of the various agencies and organizations in the communication patterns of the sector. The contacts attributed to individuals can also be taken as an indication of the individual's salience in the program sector, or at least his visibility. Further analysis is possible with longitudinal data and changes in individual and occupational-organizational ranking can be measured.

The contacts array measures attributed contacts of any nature. No assessment is made as to the nature of the contacts. Hence, a person could rank high on the aggregate contacts array for a number of reasons. A high ranking could represent a large number of routine professional contacts or a larger number of social contacts. It can also represent a high degree of contacts which either shape or facilitate decision making in the program sector. The actual data reflects the confluence of all of these forces.

Contacts data is, as we said earlier, attributional data. It measures how often a person sees himself as being exposed to another person. A person's total contacts represent what the respondents to the I-C questionnaire attributed to him. No independent measure of actual contacts was taken to determine the accuracy of those perceptions. In a general sense the contacts measure probably does reflect the generic patterning of linkages among program leadership. Two people who indicate they contact each other 30 times a month will have a high degree of actual contact, while two people who indicate they see each other once a month will have a low level of actual contact. However, analysis of the data indicates that people who rank low in total importance points will tend to indicate a higher level of contacts with people who rank high in importance points than these people will attribute to them. This suggests that attributed contacts reflect not only actual encounters but also an assessment of whom a person thinks he should be in contact with, given the status needs that most power-oriented persons have. These perceived contact patterns are significant even when they vary from actual contacts,

because they affect the behavior of an individual as he reacts to leadership initiatives and events within the program sector and the community.

Nature and Analysis of Results: #2 Importance Points

As with the contacts data, the I-C data collection yields importance points data about every person on the I-C list. As was noted earlier, the response to the importance question is scored by giving 10 points for a No. 1 ranking, 9 points for a No. 2 ranking and so on. All of the rankings received by an individual are converted into importance points and then totaled, and the I-C list is then arrayed from the highest total of influence points to the lowest. This list indicates which people are seen as being most influential in the program sector by the respondents to the I-C questionnaire. The array of total importance points for the Port Angeles I-C list is found on page 38 and can be referred to.

As with the total contacts list, a cumulative percentage can be used to determine how many people account for 25 and 50 percent of the total importance points. When comparisons are made between communities of the same size and institutional configuration, this can indicate the degree of centralization and focusing of influence in a given program.

The occupations and formal positions of those who are very high and very low in importance points can also be examined as an indication of the relative status of the institutions and organizations in the program sector. Certain occupations and institutions will tend to be over-represented in a given program sector, while others are under-represented. The list can also be taken at face value as an indication of which individuals are most influential in the program sector, but any conclusions should be contingent on the points raised in the next paragraph.

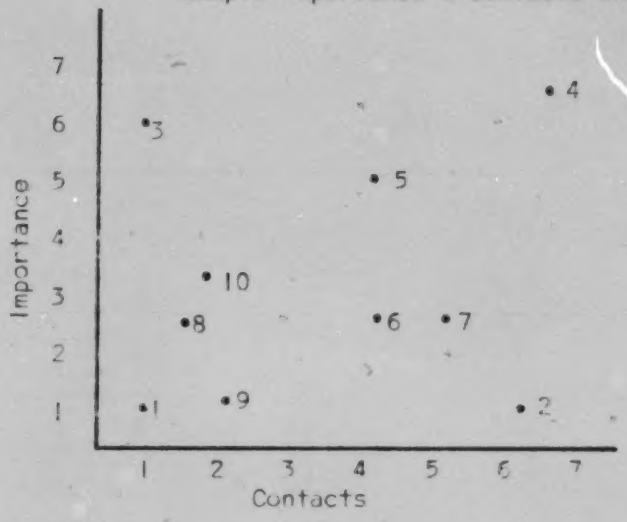
The importance data is a measurement of attributed influence without reference to any specific issue, organization, or activity. The data taps the perceptions of individuals as to whom they consider important in a generalized sense. The person who ranks high in importance points could be ranked for any or all of three reasons: First, he is expected to be important because of the position he holds. Second, he presides over an institution or organization which can have great impact on the program sector in certain cases. (These are both ascribed responses, particularly the first one). Third, he is seen as having taken leadership and initiatives and is likely to continue to do so in the future. This is more of an achieved response. The analysis of the data includes all three reasons in the importance point totals.

Nature and Analysis of Results: #3 The Importance and Contacts Chart

The next method used in the analysis of this data is to graphically examine the relationship between the total contacts score and total influence points score for each individual on the I-C list. This is done by dividing the total contacts points an individual has by the total number of interviews and then dividing the total influence points that person has by the total number of interviews taken. This gives two coordinates for each person--a contact coordinate and an importance coordinate. The contacts coordinates are graphed along the horizontal axis and the importance coordinates are graphed along the vertical axis. The result is that a person is represented on a chart by a location which expresses the relationship between his or her total contacts and his or her total importance points. The Importance and Contacts Chart for Port Angeles is found on page 44. A simplified example is presented below in Figure 2-1.

Figure 2-1

Sample Importance & Contacts Chart



In Figure 2-1, the first four points represent the extremes of the data. Point 1 is a person with few or no contacts or importance points. This person might be someone who holds a temporary position in a low salience organization. Point 2 is a person with high contacts and low importance points. This person could be a school secretary who has a high level of professional contacts, but is not seen as being involved with decision making. Point 3 is a person who is high in importance points and low in contacts. This type of person could be a state legislator who is regarded as potentially powerful but who has little day-to-day contact with people in the program sector. Point 4 is a person who

is high in both importance points and contacts. This type of person is usually the head of one of the central agencies in the program sector, such as a school district superintendent.

Points 5 through 10 represent people who fall inside these extremes. There are likely to be relatively few people in the Point 5 area who are seen as active, important people. These people do not necessarily hold an office or head an organization although they often do. A larger clustering of people can be expected at and below points 6 and 7. The bulk of the active, salient people in the program sector will be located in this area of the chart. Another group of people will fall in the range defined by points 8 and 9. These are people who have a low general involvement in the program sector or a very specialized, limited involvement. A few people will fall in the area of point 10. This usually indicates a person associated with an office or institution which is periodically highly involved with decision making in the program sector but which has a low level of routine contact with other people and institutions in the sector.

What the Importance and Contacts Chart allows the researcher to do is to pull the data apart by giving the total importance points and contacts arrays another dimension. After viewing them separately, they are combined to allow a comparison between individuals. The chart is intended to be seen as an aggregate influence structure though it does not purport to display influence linkages between individuals. This is done in yet another form of presentation. The Importance and Contacts Chart can yield a number of inferences, however.

First, the general pattern of distribution indicates whether all people who are high in importance points have the same kinds of involvement with the program or whether they are involved in a variety of roles. Referring again to Figure 2-1, if the top 10 people on the importance points array all cluster from point 5 to point 4 in one community and if the top 10 people in the same program in another community are located on this chart so that the two are at point 4, two at point 5, three at point 10, and three at point 3, one can assert that there are some significant differences in the structure of influence in these two communities. Individuals located in the area of 8-9 on chart 2-1 can, from our experience be expected to be active, to take initiatives and to be the molders of policy. Whether there are many or only a few persons located here makes a real difference in the character of program leadership in a community. The occupations and affiliations of the people in the high influence points, high contacts positions are also indications of the influence of the professions and institutions that they are associated with.

The Importance and Contacts Chart is intended to provide a rough indication of how concentrated or diffuse influence is in a given

program. Those who fall in the high importance, high contacts positions are the people who are well known and considered salient by a large number of people in the program sector. They are looked to and expected to "keep their fingers on the public's pulse" by others not so centrally located in the program. Our research in other communities indicates that this patterning changes only slowly and over time. The distribution of influence it reflects exists over time without reference to any specific issue or event. For an examination of the dynamics of the relationships between those who constitute the pool of legitimate leaders for a program we turn to what we have come to call molecular charts.

Nature and Analysis of Results: #4 Molecular Charts

The Molecular Charts represent a shift from the characterization of the form and distribution of influence to the ways in which it goes into process within the confines of what we have come to call the network of policy-making influentials. Molecular charts are a method of analyzing what individuals in the respondent group perceive as the way influence operates within this network. The construction of these charts begins by examining the data from each individual to determine where there are relationships between two people in the respondent group based on reciprocal contacts or reciprocal importance ranking.

The first question asked of the data is whether two people are linked by reciprocal contacts at specified levels. The cutoff point used in the Port Angeles educational research was 18 reciprocated contacts. Two people are said to be connected by a contacts linkage when each attributed 18 or more contacts to the other. The data is examined using this criteria and all of the diadic contact relationships are identified.

The next question that is asked of the data is which individuals are linked by reciprocal importance rankings. If two people rank each other and also attributed one or more contacts to each other, then they are said to be connected by an influence linkage. (The requirements of one or more contacts is applied to lessen the chance of having an influence linkage which is based on purely reputational or stereotypical responses to the importance question.) Without some perception of regular contact it is doubtful that an operable relationship exists.

The next question asked of the data is whether there are those who are linked by a mixture of contacts and importance rankings. If A ranks B with one or more contacts and B attributes 18 or more contacts to A, but does not assign a rank to A, then they are said to be connected by a mixed linkage.

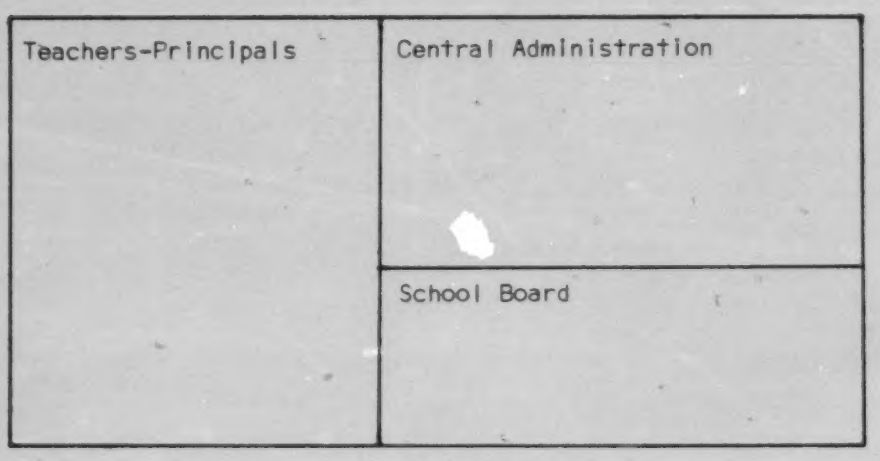
The result of this analysis is that a set of diads are extracted from the data. These paired sets of influentials constitute the links in

the chains through which influence is exercised. We begin with those persons who are members of more than one two-person set. For example, one person in the Port Angeles study is a member of 12 such diads. The next step is to display these two-person sets so that influence and communication patterns can be identified in the program sector.

The display of the chains of two-person sets through the Molecular Charts begins dividing the program into its component parts by identifying its major sectors, based on the distribution of contacts and importance points in the I-C chart. In health care four sectors present themselves; private health care, the hospital, public health care, and mental health. Other divisions unique to a community are added if justified by the data. The creation of these sectors becomes a matter of breaking the program as an identifiable social domain in a community down into the functional sectors where activities through which its productivity is achieved are located. It is within these functional arenas that influence goes into process in the first instance.

Figure 2-2, below, is one way of representing the sectorial structure of an educational program such as that studied in Port Angeles.

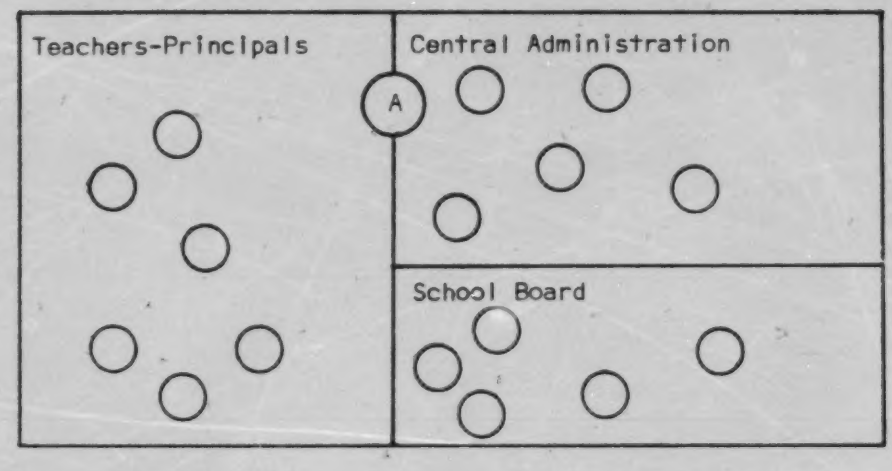
Figure 2-2



The size, number, and placing of these sectors is proportional to the number of two-person sets that fall into each of them and how many diadic connections exist within as opposed to across their boundary lines. This will be clarified as the discussion proceeds.

The next step is to place individuals from the inventory of two-person sets into the sectors. A person is placed in the sector which corresponds to his occupation or educational association. The Molecular Chart begins to emerge in a form such as Figure 2-3 below.

Figure 2-3

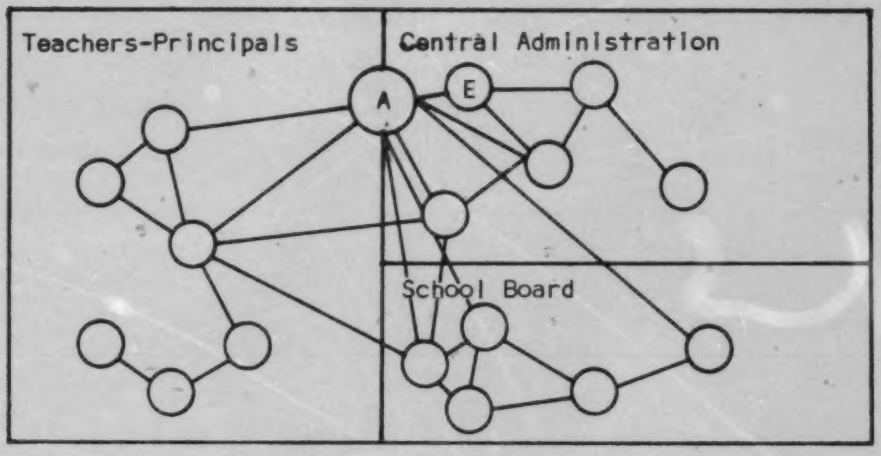


There are some boundary problems with the use of the sector classifications. Some individuals are active in more than one sector. Person A in figure 2-3 could be a curriculum consultant with some level of classroom duty. While a number of people may have involvements in more than one sector, this is an unusual arrangement in the sites where we have conducted our surveys. Leaders typically define their roles with reference to a single sector.

Where an individual circle is placed within the sector and what size it has is largely a function of who the individual is linked to, who attributes influence to him, and how many total importance points he accrues. This will become more easily understood once the actual charting of the Port Angeles data is seen.

The next step is to connect an individual's circle to the circles of those he shares linkages with. Because there can be several different forms of linkage, there can be different patterning of circles. There are several forms of this chart; the first contains all the linkages between individuals regardless of type (contacts, influence, or mixed). These linkages are represented by a line between any two people whose responses indicate a linkage exists. We have labeled this form of the molecular chart a mapping of the communications network. It is illustrated by Figure 2-4.

Figure 2-4



Labeling this configuration of the molecular chart as a communications network reflects our sense that different types of linkages operate in special ways. All linkages serve as channels through which communication may take place, of course; what our research suggests is that the flow of communication and the channels through which it courses takes several different shapes according to the function that is being served.

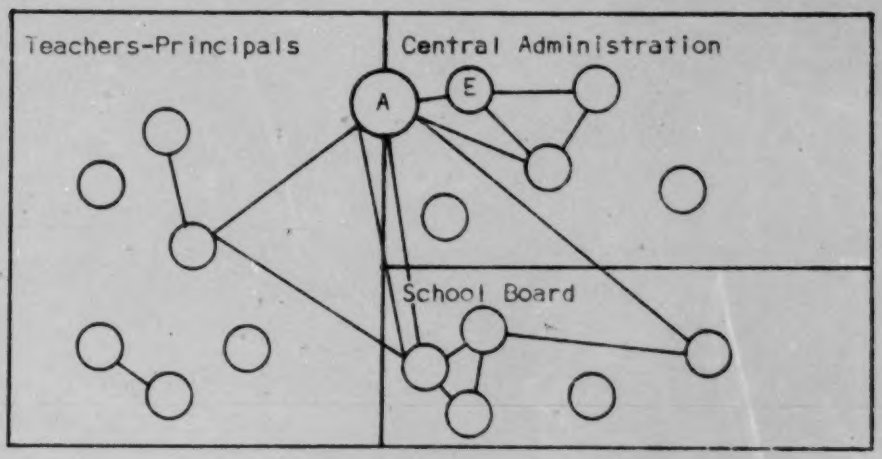
The objective in constructing the communication chart is to

visually represent the full overlay of all interpersonal communication patterns that exist within the network of local policy-making influentials, and to represent these over time and across the sectors into which the program is organized. Charting allows the researcher to take relationships between two individuals and express them as a larger configuration of patterned interrelationships.

The communication chart can be looked at in a number of ways to provide several kinds of insights. The linkages across sector boundaries or between different occupation groups gives an indication of whether the linkages necessary to share pertinent information exist and are functioning. In Figure 2-4, for example, there are linkages between all three sectors. Each sector has operable communication channels to each of the others. They may or may not be effectively used, but that they exist means that the tensions that result from communication breakdowns can be avoided if the will to make contact asserts itself. When these linkages do not exist isolation is almost unavoidable; contention is almost sure to follow.

The next step in the analysis of this data is to construct a chart constituted from the data reflecting importance points. These linkages are represented by heavy lines between the circles; the existence of a line reflects each respondent's having perceived the other as influential enough to have ranked him as important in determining the character of the educational program over time. This form of the Molecular Chart is called an influence chart and is illustrated below in Figure 2-5.

Figure 2-5



Labeling this a charting of influence derives from studies in several communities that have indicated that these linkages tend to be stable and enduring--persisting and functioning in spite of tensions and conflicts which regularly disrupt the flow of information in the communication chart. Our work suggests that those who maintain relationships of this kind do so for the purpose of influencing the premises from which programmed activity is launched rather than regulating its progress at any given moment.

Just as the communication chart tells the researcher/consultant which individuals and sectors are isolated from the normal flow of information (and who can be expected to require supplemental inputs if they are to participate effectively in instituting developmental changes), the influence chart allows the researcher/consultant to ascertain which of the individuals who hold places in the net of policy-makers can be expected to take the initiative in framing the perspectives and identifying the basic values of the program, which are so important in determining its long range impacts. In Figure 2-5 one sees a situation where the school board and the central administration are internally integrated into a functioning whole but where person A serves as the only linkage between the teachers and administrators. This suggests a very different situation than one where the influence chart shows a full integration between all sectors.

Other combinations of these types of linkages can be used to construct molecular charts. The most obvious is a combination of the communication and influence charts to show the overlapping patterning of influence and communication. A chart of this type for Port Angeles will be presented below.

Nature and Analysis of Results: #5 Sector Charts

The importance points arrays, the contacts arrays, and the importance and contacts chart are all aggregate presentations of the relationships found in the I-C data. They show what the respondents, as a group, said about an individual. The molecular charts, in contrast, depict the individual relationships between people, as these are indicated in the I-C data. The molecular charts show what individuals said about each other. The sector chart, to which we come now, is a visual device that offers a scale in between the individual and the aggregate level of the data.

This chart displays what those in a particular set or sector of leaders perceived as the configuration of that set in that sector. For example, in an education study the sector chart tells the researcher what administrators said about themselves and about the citizens and the teachers with whom they saw themselves as actively involved.

The construction of the sector chart begins by sorting all of the names on the I-C questionnaire into separate sets. The number and specificity of the classifications is somewhat dependent on what the researcher would like to know, though it is basically determined by the ways in which those on the scene have come to look at the program. It is meaningful to talk about education personnel in one context; teachers and administration in another; and teachers, principals, and central administration in another. In Port Angeles the sets used in the sector chart corresponded roughly to the sectors from the molecular chart which, in turn, had been derived through a careful series of discussions with those who knew the community and the program best.

The sector linkages are derived from the importance points data. The procedure is to take the importance points lists from all of those who are located in a sector and determine who they, as a group, ranked. For example, the teachers as a group may give 30% of their rankings to the school board, 30% to the central administration, 20% to themselves, 5% to citizens and 5% to members of the business community. This analysis of who a given set of leaders ranked is then carried out for all of the classifications being used. No distinction is made between a number 1 ranking and a number 10 ranking for the purpose of this chart. Additionally, an adjustment is made when any set or category of leaders is smaller than ten. Thus, if there are only 5 school board members and every person in a set ranks all 5, the school board would then receive a score of 50% even though they actually received 100% of the possible rankings. For this reason the linkages between groups are expressed in terms of the percentage of possible rankings.

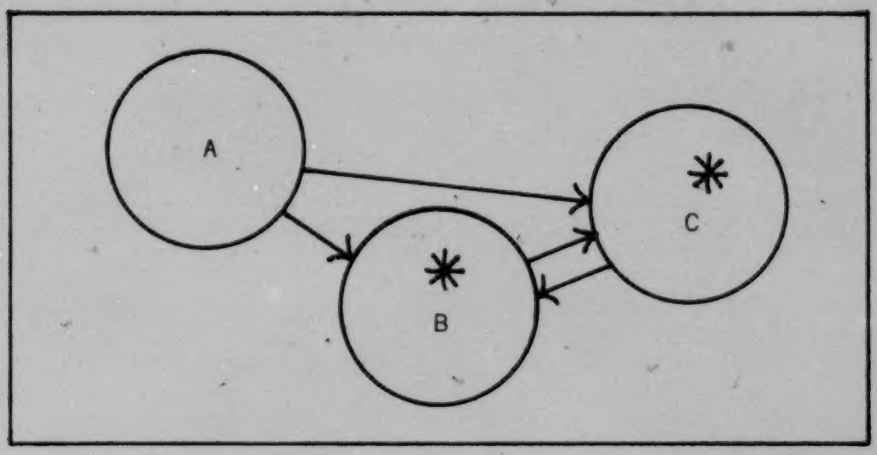
The sector linkages data is first presented in table form. The table for Port Angeles is found on page 55; it may be helpful to refer to it at this time. The sector linkages table shows how each set of sector leaders rated themselves and each of the other sets and sectors. From this comparison the existence and direction of influence linkages between groups can be inferred. A 5% ranking of teachers by citizens and a 50% ranking of citizens by teachers, for example, suggests a very different situation from a 50% ranking of each by the other or a 5% ranking of each by the other.

In constructing a sector chart from the table presenting the linkage indices a determination needs to be made as to the cutoff point at which a one-way linkage between groups is said to exist. In Port Angeles a figure of 18% of the possible rankings was used. This threshold reflects both a natural break in the data and the authors' assessment of the meaning embedded in the linkage indices.

The sector chart is constructed by representing each of the sets in a sector circle and using arrows to show the influence attributed to one set of leaders by another. If a set of leaders assessed its own

members as having considerable influence, an asterisk (*) was placed in its circle to signify this. The sector chart for Port Angeles can be found on page 56. A simplified example is presented below in figure 2-6.

Figure 2-6



In the program sector shown in Figure 2-6, Set A attributes influence to Sets B and C, while B and C attribute influence to each other and to themselves. The similarities to the molecular chart can be noted.

The combination of insights gained by the researcher from the data analysis, particularly the importance and contacts chart, the molecular charts and the sector chart, when combined with the insights gained from the feedback process (which is discussed below) brings the researcher to the point where he can infer from the research with a good deal of confidence just who the policy-making influentials in the program are and how they relate to each other. This is an interpretive step; the data deals with the perceptions that the active, salient members of the community have about influence and communication patterns in the program sector. Both the feedback of the data and attempts at application in a number of communities have convinced us that we have developed a tool which does identify the salient actors in local program sectors, particularly when the program is viewed in a time frame that extends beyond the particular of single decisions. No claim is made that every actor

who will be salient in future decisions will be identified. But in terms of setting the "rules" and agendas of the program, we have found that the results of the importance--contacts research allow us to identify the key people who must be dealt with in any attempt to initiate and/or facilitate actual, lasting program change.

Initial Attempts at Validation

This attributional methodology, which is used to generate data about program leadership, yields influence and contacts data that are then analyzed to determine generalized influence relationships, which, under continued analysis, yield a variety of empirically based visual models presented above in this discussion. Because the data taken from local leaders is, in the strictest sense, subjective we cannot maintain that these charts represent more than subjectivistic conceptions of the distribution and form of influence in a local program of action. Which is to say, they are a valid, essential part of decision making only in so far as they are perceived as real and meaningful by those in the program sector. If we were to offer them as validated--as presenting reliable and verified knowledge--we should have to have substantiated them through the use of more truly independent measures. Alternatively, their predictive accuracy might be established. At this time neither of these sources of validation are available.

Accepting that we can claim nothing more than so-called face validity for these findings from what we have done there has been a concerted attempt to elicit the reactions of local leaders to these presentations as a means of seeking a better understanding of what our findings mean.

The process of sharing the findings from the research through feedback is carried on through a series of interview-like discussions where the researcher returns with a fairly elaborate presentation to visit with the individuals he interviewed some weeks earlier. The folder that is used in the feedback begins with a replica of the questionnaire and proceeds from there through a review of the process through which data was first coded, and then collated and analyzed. The tables and charts described above display the results of each step in the data analysis and as such allow the respondent to "walk through" the analysis with the researcher.

Seeing the data analysis through the feedback process is, of course, a strange and unusual experience for almost all the respondents, but one that they invariably come to appreciate. For some the value of the feedback comes from a sense of having seen inside the shell of science; while for others the meaning of the feedback process lies in the insights that it provides into the intricacies of the structure of the

network of the local influentials. In looking at the importance and contacts chart those who hold salient positions in the influence structure of the program will perceive the chart not as fixed, but as a freeze frame of a dynamic situation. Some people will suggest certain individuals who are presently in a medium contacts and low importance points position can be expected to move up into the high contacts, high importance level; others will move the opposite way. While the importance and contacts chart is something which the respondents have never seen before they can, given the proper explanation, engage the data presentation as if it were the program sector and talk about what it means and how it will change. All of this suggests that the data and the analysis as presented by the importance and contacts chart is real to the community member, that it represents relationships that are perceived and considered meaningful by them. This leads us to believe that the data and the analysis tap stable relationships which are part of the structure of decision making in the program sector.

The feedback of the molecular charts also becomes a uniquely meaningful experience for most respondents. On occasion they speak of it as what are sometime labeled peak experiences--moments of insight that allow the respondent to transcend the limits of the program sector and look at it in a new light. A typical response from a local leader who is only casually involved in educational affairs in the community would be, "that is interesting, very interesting. I always imagined that there was some kind of pattern to all of this but this is the first time I have had the opportunity to see what it might be like."

From others with a more active involvement, one stretching over a longer period of time the response might be as follows: "That certainly looks like the way things shape up here. What I don't understand is how that computer program allowed you to locate people in relation to each other in such an accurate way. Could we go back over that section of this material?" From someone the charts showed to be an occupant of a pivotal position in the network of policy-making influentials the response might be as follows: "That's it; you have hit it right on the head. My, this certainly is a comprehensive presentation from such a simple questionnaire. I don't understand exactly how you did it, but you have got it almost down to the last person." Highly informed individuals almost without exception will then proceed to talk about where someone was located before he undertook some action or another and how it was that someone else who at one time had a great deal of salience in the network gradually lost it. In not a few cases the respondent will disclose his feelings about his own situation--commenting on his desire to move away from the eye of the storm or of his intention of undertaking activities that would move him more into the center of things.

None of these responses would be viewed by the rigorous scientist as providing validation for the veracity of the technique, and, as

we say, we make no claims of this kind on the basis of these responses. What we do hold, however, is that these representations are universally meaningful to those who have been involved in leadership roles in education over a long enough time to become fully informed about the program, its structure and its processes, and that on the basis of this involvement they take considerable insight from their encounter with this research-feedback process. While the matter of ultimate scientific validation of this technique must be dealt with at some time, it is, in our eyes, sufficient for the moment that this technique appears to provide a useful educational experience for all of those who come in contact with it. We shall speak of this as its "clinical potential" in a later chapter.

PORT ANGELES IMPORTANCE-CONTACTS RESULTS

Data taking in Port Angeles began in the fall of 1974 and continued for about five months. The sequence of activities was just that described earlier in this chapter:

1. Familiarization of researchers with site,
2. Compiling a comprehensive list of all of those who had been active in educational policy making in the previous year,
3. Culling this listing through the judging process followed by preparation of the list of approximately one hundred and fifty individuals most active in educational policy making,
4. Interviewing the most salient and/or most active policy-makers using the I-C questionnaire,
5. Analysis of this data.

In Port Angeles the judging list came to include approximately 450 names. This total was reduced through the judging process to 145 names, which then became the list for the I-C questionnaire. The questionnaire was administered to 53 local leaders. A copy of the first and last pages of the judging list, a copy of the I-C questionnaire, and a list of those interviewed along with their occupations are all included in Appendix A. An examination of the list of those interviewed indicates that there is a cross section of community types among them.

As was noted earlier, there was no attempt to utilize a conventional sampling procedure in selecting these interviewees. We instead rely upon what we label a snowball selection technique; interviewing

begins with those who are seen to be most salient from the judging data and then extends out from these results. The object is to interview all of the active and/or salient people in the program sector as indicated by the results of the judging and the I-C questionnaire. The patterning seen among the respondents to the I-C questionnaire in Port Angeles is completely consistent with our prior experience with this technique in a dozen other communities and we are confident that there is no reason to believe some undetected condition in the community disrupted the operation of our selection procedure.

Contacts Array

The aggregate contacts data from the Port Angeles Education Study is contained in Table 2-1. The top 50 places from the total contacts array are displayed from number 1 to number 50. This represents what the 53 respondents said as a group about each person on the table. Table 2-2 is a breakdown of the aggregate contacts data by group. In looking at the contacts array the most obvious pattern is the overwhelming domination of people employed in education or holding official education positions. Counting the 6 people from the community college there are 44 educational personnel among the top 50 in contacts. Because the contacts question does not distinguish between routine professional contacts and those of a substantive nature, the domination by education personnel is not surprising, yet it is certainly possible to have alternative configurations within an education system, which would be indicative of a different social system than is indicated by the Port Angeles contacts data.

The identification and positioning of groups in the top 50 places in the total contacts array is also an indication of perceived communication pattern in the education system. The top 6 places on the list are people from the central administration of the school district. Seven of the next 9 people are high school principals. The top 15 names on the list are almost entirely administrative personnel. The first teacher, Hartmann #14, is the president of the teachers' association. The teachers hold 19 of the places on the list of the top 50; of these only 3 are not high school teachers. The other groups represented are the community college with 6 persons, people from the business community and media with 4 people and the school board with 4 people. Missing from the top 50 places on the total contacts array are representatives from local government and "citizens", non-education people who do not fall into any of the above mentioned categories.

In the total contacts array one can also see examples of the different bases for a person having a high contacts score. The person at the top of the list is the receptionist at the district office. It is reasonable to assume that the majority of her contacts are of a

TABLE 2-1

PORT ANGELES EDUCATION SURVEY

Total Contacts Array

	Contacts	Name	Identification
1)	525	Sapp	Receptionist, District Office
2)	512	Scarr	Superintendent, School District #21
3)	448	Sleeper, D.	Business Mgr., School District #21
4)	421	Slehofer	Curriculum Consultant, School District #21
5)	371	Horne	Asst. Superintendent, School District #21
6)	366	Kinney, B.	Reading Consultant, School District #21
7)	336	Williams	Sr. High School Principal
8)	321	Timm	Elementary School Principal
9)	310	Lang D.	Sr. High School Vice Principal
10)	296	Mason	Jr. High School Principal
11)	274	Hoffman	Receptionist, High School
12)	269	King	Elementary School Principal
13)	265	Norton	Sr. High School Vice Principal
14)	265	Harriman	Teacher, Sr. High
15)	258	Lang, R.	Elementary School Principal
16)	257	Thayer	School Board Chairman
17)	254	Grier, G.	Teacher, Sr. High
18)	251	Collins	Sr. High School Counselor
19)	244	Lindelien	Sr. High School Counselor
20)	241	Kinney, L.	Elementary School Principal
21)	241	Thornton	Elementary School Principal
22)	241	Enderle	Psychologist & Spec. Ed., School District #21
23)	236	Brown, H.	Teacher, Sr. High
24)	234	Drain	Teacher, Sr. High
25)	231	Schermer	Elementary School Principal
26)	222	Biel	Voc. Ed. Director, College
27)	221	Hoglund	Sr. High Counselor

Total Contacts Array

28)	215	Maier	President, College
29)	214	Kays, J.	Teacher, Sr. High
30)	211	McLaughlin	Teacher, Sr. High
31)	198	Berkley	Teacher, Sr. High
32)	196	Thomas	Newspaper Publisher & Editor
33)	193	Hostetler	College Evening School Director
34)	190	Young, F.	College Dean of Instruction
35)	188	Kalahar, G.	Teacher, Sr. High
36)	185	Feiro	College Dean of Students
37)	184	Powell	Jr. High School Principal
38)	184	Hesselman	Teacher, Sr. High
39)	182	Northrop	School Board
40)	181	Mattila	Education Reporter, Newspaper
41)	179	Cornett, E.	Teacher, Sr. High
42)	173	Cornett, R.	Teacher, Reading
43)	169	Fairbairn	Teacher, Sr. High
44)	169	Kennedy	Teacher, Sr. High
45)	167	Byrd, K.	Teacher, Elementary
46)	166	Ducceschi	Managing Editor, Newspaper
47)	159	Keys	Teacher, Sr. High
48)	159	Quast, W.	Professor, College
49)	157	Willison	Savings & Loan President
50)	153	Ross, R.	Teacher, Jr. High

TABLE 2-2

Contacts Breakdown
(Top 50 places)

Supt. Office	= 1, 2, 3, 4, 5, 6, 22
Principals	= 7, 8, 9, 10, 11, 12, 13, 15, 20, 25, 21, 37
Teachers	= 14, 17, 18, 19, 23, 24, 27, 29, 30, 31, 35, 38, 41, 42, 43, 44, 45, 47, 50
Sch. Board	= 16, 39
College	= 26, 28, 33, 34, 36, 48
Downtown (Business & Media)	= 32, 40, 46, 49

Percentage of Total Contacts by Sector

Top 50 Places		Total Contacts Points	
Supt. Office	= 25% (3,158 contacts)	Supt. Office	= 16% (3,266 contacts)
Principals	= 23% (2,721 contacts)	Principals	= 14% (2,842 contacts)
Teachers	= 33% (4,100 contacts)	Teachers	= 33% (6,584 contacts)
Sch. Board	= 4% (439 contacts)	Sch. Board	= 5% (841 contacts)
College	= 9% (1,165 contacts)	College	= 6% (1,165 contacts)
Downtown	= 6% (700 contacts)	Downtown	= 12% (2,347 contacts)
Government	= 0%	Government	= 4% (694 contacts)
Citizens	= 0%	Citizens	= 9% (1,843 contacts)

routine, professional nature. The superintendent who is number 2 in total contacts probably also has a good deal of routine, professional contact. But he is also assumed to have a number of contacts which are of a policy-making nature. A third situation is illustrated by the local newspaper editor, number 32 on the list. Because Thomas' occupation would not bring him into routine contact with education people, a good number of the contacts attributed to him are probably substantive in nature. The total contacts array also illustrates how different people fill the same role. Why is one junior high principal number 10 on the list and another number 27? Why is one senior high teacher number 14 on the list and another number 47? The answers are not found completely in the I-C data analysis but the researcher is given direction with which to begin an inquiry into the specifics on the interpersonal dynamics of the system. Because the interview selection process is keyed to the importance points data more than to the contacts data and because it is not a random sampling process, there are more people interviewed from some groups than from others. This may seem like a biasing of the data, but the contacts data is not intended to measure the actual contacts that occur; rather it is intended to tap the perceived communication patterns that are seen by the most active and salient people in the school district.

The breakdown of the total contacts by group found in table 2-2 also provides insights about the educational system in Port Angeles. The breakdown is made for both the contacts given to the top 50 people on the total contacts array and for all 145 people on the I-C questionnaire. The superintendent's office, with 7 people, accounts for 25% of the contacts given to the top 50 people. The principals, with 12 people, have 23% of those contacts and the teachers, with 19 people, have 33% of those contacts. The employees of School District 21 account for 81% of the contacts attributed to the top 50 people on the total contacts array. They also account for 63% of the total contacts attributed to everyone on the I-C questionnaire list. In contrast the school board, college, downtown, government and citizen groups do not account for more than 10% of the contacts attributed to the top 50 people. Overall, the patterns noted by examining the top 50 place on the total contacts array, table 2-1, are substantiated by the percentage breakdown found in table 2-2.

While the contacts data can be used in comparative and time series studies its major importance lies in what it has to say about a particular education system at the time the study is carried out. The data reflects how the most salient and active people in the education system in Port Angeles see the patterns of communication. This is not a mirror of reality; there are certainly patterns of communication that are not reflected in the data. But these patterns are not perceived by the central people in the education system and as such will, we believe, have less impact than what has been tapped by the I-C questionnaire.

The data is reflective of how people view the educational

TABLE 2-3

PORT ANGELES EDUCATION SURVEY

Total Importance Points Array

	Points	Name	Identification
1)	472	Scarr	Superintendent, School District #21
2)	324	Thayer	School Board President
3)	141	Berglund	Citizen
4)	137	Sleeper D.	Business Mgr., School District #21
5)	131	Horne	Asst. Superintendent, School District #21
6)	118	Hare	School Board
7)	99	Phillips	Bank President
8)	96	Kinney B.	Reading Consultant, School District #21
9)	83	Siehofer	Curriculum Consultant, School District #21
10)	76	Williams	Sr. High School Principal
11)	72	Thomas	Newspaper Editor and Publisher
12)	70	Northrop	School Board
13)	65	Robins	Citizen, Citzen Advisory Council
14)	58	Sandison	State Senator, Insurance Agency
15)	58	Hartman	Teacher, Sr. High & P.A. Ed. Assoc. President
16)	49	Anderson	School Board
17)	37	Radke	Real Estate
18)	36	Kinney L.	Elementary School Principal
19)	35	Ross R.	Teacher, Jr. High
20)	34	Herring	Owner, Radio Station
21)	34	Matte	School Board
22)	34	McLaughlin	Teacher, Sr. High & P.A. Ed. Assoc.
23)	33	Kays J.	Teacher Sr. High
24)	33	Bell	Voc. Ed. Director, College
25)	30	Feiro	Dean of Students, College
26)	28	Willison	President, Savings & Loan
27)	28	Ellis	Former Superintendent School District #21

Total Importance Points Array

28)	28	Rains	Citizen
29)	27	Maier	President, College
30)	24	Mason	Jr. High Principal
31)	22	Connor	State Representative
32)	22	Buchmann	State PTA Assoc.
33)	21	Elliot	County PTA President
34)	21	Lamoureaux	Citizen, Labor
35)	20	Mattila	Education Reporter, Newspaper
36)	19	Ducceschi	Managing Editor, Newspaper
37)	18	Rogstad	Plant Manager, ITT Rayonier
38)	18	Savage	State Representative
39)	16	Duncan De	Teacher, Elementary
40)	15	Duncan Do	Citizen, Citizen Advisory Council
41)	14	Buck	Owner, Radio Station
42)	12	Haguewood	City Councilman
43)	11	Quast W.	Professor, College
44)	11	Eells	Businessman
45)	10	Brown M.	Former School Board
46)	10	Royce F.	ITT Rayonier Supervisor
47)	10	Timm	Elementary School Principal
48)	10	Rudell	Businessman
49)	9	Cockrill	Citizen
50)	9	Norton	Sr. High Vice Principal
51)	9	Enderle	School District Psychologist

TABLE 2-4

Importance Points Breakdown
(Top 50 places)

Supt. Office = 1, 4, 5, 8, 9, 51

Sch. Board = 2, 6, 12, 16, 21

Citizens = 3, 13, 27, 38, 32, 33, 34, 40, 45, 46, 49, 52

Downtown = 7, 11, 17, 20, 26, 35, 36, 37, 41, 44, 48

Principals = 10, 18, 30, 47, 50

Government = 14, 31, 38, 42

Teachers = 15, 19, 22, 23, 39

College = 24, 25, 29, 43

Percentage of Total Importance Points by Sector

Top 50 Places		Total Importance Points	
Supt. Office	= 33% (928 points)	Supt. Office	= 32% (928 points)
Sch. Board	= 21% (595 points)	Sch. Board	= 20% (595 points)
Citizens	= 13% (379 points)	Citizens	= 14% (396 points)
Downtown	= 13% (362 points)	Downtown	= 13% (380 points)
Principals	= 6% (155 points)	Principals	= 5% (161 points)
Government	= 4% (110 points)	Government	= 4% (112 points)
Teachers	= 7% (176 points)	Teachers	= 7% (216 points)
College	= 4% (101 points)	College	= 4% (110 points)

system and a situation different from Port Angeles at the time the data was taken would yield different data. A more active school board might have more contacts and a figurehead board even less. The same holds true for the impact of issues. The citizen participation indicated by the contacts data for a school system involved in desegregation or textbook conflicts would probably be higher than is indicated by the Port Angeles contacts data (where neither of these issues were active at the time). From the contacts data, the next step in the analysis is the aggregation of the importance points array, which will present a different view of the education system in Port Angeles.

Importance Points Array

The top 50 places on the total importance points array are found in Table 2-3. The table is based on how many importance points were attributed to each person on the I-C questionnaire by the 53 people who were interviewed. Table 2-4 is a breakdown of the total importance points data by group. In contrast to the top 50 on the total contacts array, there is much more representation of non-educational personnel among the top 50 places on the total importance points array. Twenty-seven people on Table 2-3 are not associated directly with the school district or the community college compared to only 4 people among the 50 on the total contacts array. While high contacts were attributed primarily to people employed by the school district, high importance points are attributed to a wide range of people from the community. Again, in contrast to the top 50 contacts array, representatives of all eight categories of people used in the breakdown of the contacts data appear on the top 50 importance points array.

The individuals at the top of the importance listing illustrate the different bases from which a person can be highly ranked on this list. The top person on the list is the superintendent of the school district. Given the position that he holds in the system it is hard to imagine him not ranking high in importance points. The number 5 person, the assistant superintendent, was very new to the community when the study was conducted. His ranking might be higher in a follow-up study because the respondents would then be more familiar with him. It might also be that his ranking would go down because people were ranking him on the basis of anticipations he may be unable to fulfill. As carefully drawn as the instructions to the I-C questionnaire are, the "is", "should" and "maybe" still become interwoven in the data.

This is, of course, the issue of ascriptive vs. achieved rankings; it permeates any attempt at interpretation of the importance points rankings. The rankings of people who hold official positions, such as the superintendent or president of the teacher association, can be expected to reflect a mixture of achieved and ascribed importance. A teacher who ranks high without any official position may have a ranking

more in the achieved area. The I-C data does not allow determination of the basis of rankings with certainty, but the analysis that one made beyond the importance points array allows the researcher to begin to come to grips with this.

The interpretation of the top 50 importance points list should also be qualified by the limits of the methodology. The difference between being number 1 and number 25 on the list can be of considerable significance, but one can not conclude that the number 12 person, Northrup, with 70 importance points is twice as influential as is the number 19 person, Ross, with 35 importance points. The intersubjectivities of role ascription and role achievement makes this impossible. The data does, however, give the researcher a strong indication of how the large number of people on the I-C questionnaire begin to form into identifiable groups which have an impact on the educational system in Port Angeles.

In looking at a group breakdown of the contacts data it was evident that the three education groups dominated the communication perceived by the respondents. In examining the breakdown by group of the importance points in Table 2-4 quite a different picture emerges. There are two groups that dominate the total importance points breakdown, the superintendent's office and the school board. Below these two groups is another level containing the citizen and the downtown groups. After this there is another drop off to the next four groups: principals, government, teachers, and college. These patterns are the same whether one considers just the top 50 places or all the importance points attributed to everyone on the I-C questionnaire. There is considerable concentration in the top two groups with over 50% of the importance points being attributed to the superintendent and school board groups. This concentration is even greater if one considers the average number of points per person in the group because the superintendent's office and the school board are two of the three smallest groups in terms of people on the I-C questionnaire. As a prelude to the importance and contacts chart it is interesting to note that only the superintendent's office is ranked highly on both the breakdown of the contacts and the breakdown of the importance points. The school board and citizens are high in importance and low in contacts while the teachers and principals are high in contacts and low in importance.

Again, it is critical that we think in terms of what this tells us about the education system in Port Angeles and how a different situation would yield different data. A stronger set of principals or a weaker school board would result in a different picture than is seen in the configuration of importance points data for Port Angeles. The data gives the researcher specific insight in the education system in Port Angeles. But the total importance points and total contacts data should be considered only the beginning. It is the combinations of the two data sets and the exploration of the relationships between individuals

and groups that are presented in the next three sections which give the researcher the critical insights into the educational system and the community.

Importance and Contacts Chart

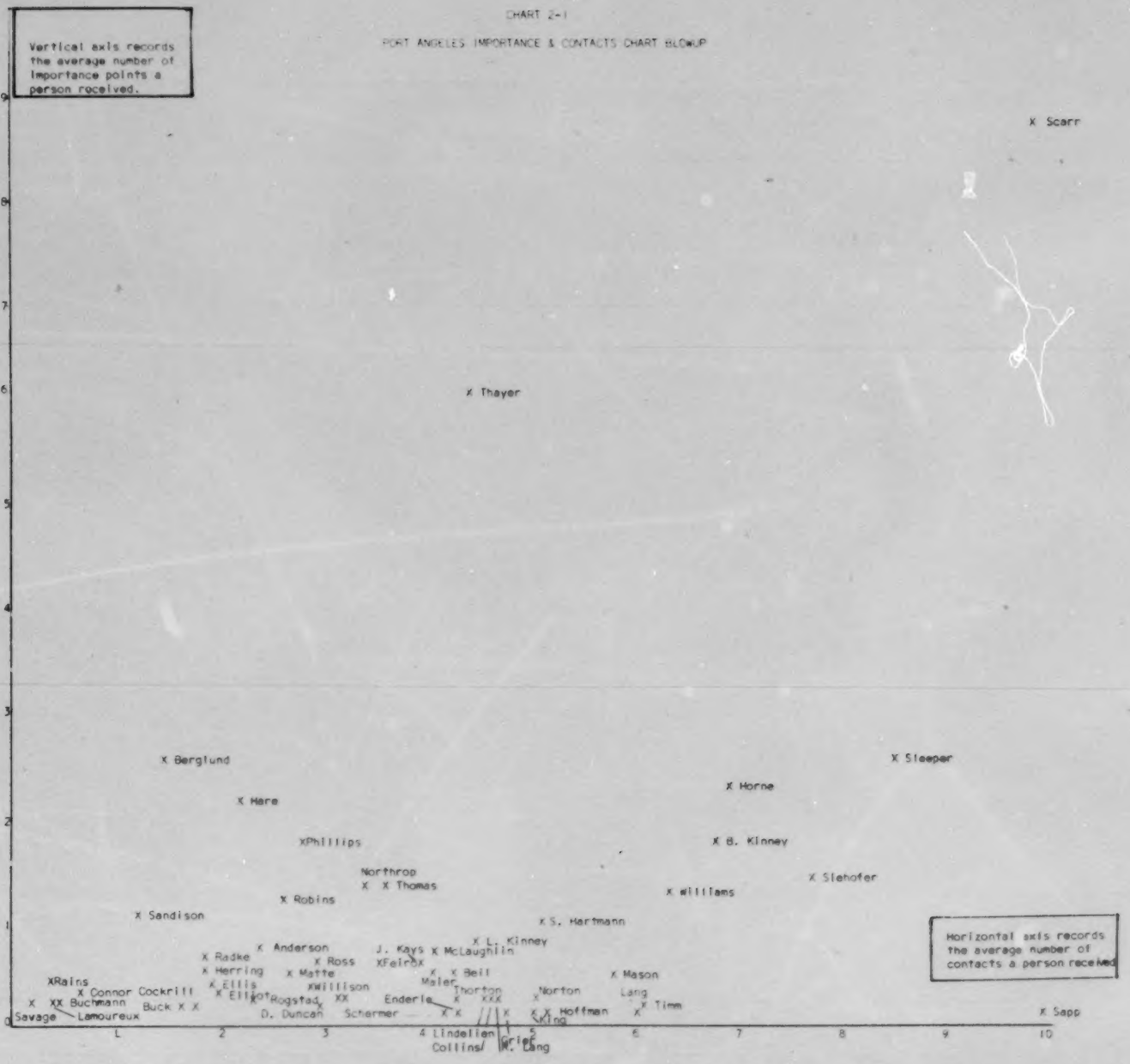
The total contacts and total importance points data for Port Angeles have been combined in Chart 2-1 to form the Importance and Contacts Chart. This chart adds a second dimension to the total contacts array and to the total importance points array by showing the relationship between the total contacts and the total importance points for each individual who ranks high on either measure. On Chart 2-1 the average number of importance points are graphed on the vertical axis and the average number of contacts are graphed on the horizontal axis. The use of averages makes the scale of the chart the same regardless of the number of interviews used for constructing it.

The position of Sapp, the district office receptionist, at the extreme high contacts and low importance points position at the lower right illustrates the case of a person whose position gives them a high degree of routine, professional contacts but who has little influence on substantive decisions for the education system. The opposite case of high importance points and low contacts is illustrated by the positioning of Berglund and Sandison on the left side of the chart. This type of positioning indicates people who are seen as having potentially great impact on the system, but who intervene in the system sporadically and only on specific issues. Sandison is a State senator who is important in State educational policy. Berglund is a citizen who has been active in issues in the past and who is often characterized as a "school critic." To a lesser extent Hare, Phillips, Northrup, Robins, and Thomas are in the same high importance points, low contacts position, but the data suggests they have more regular interaction with the rest of the educational system and more regular input into policy making. Some clear distinctions exist between these five people which can be inferred from their occupation and activity data. Robins, the head of a citizens' advisory group, is, like Berglund, a person primarily concerned with education. Her influence in the community is largely limited to education. In contrast, Phillips, the banker, and Thomas, the newspaper editor, are more accurately seen as "generalists"; a study of perceived influence in a number of program sectors in the community would almost certainly yield their names. Hare and Northrup are members of the school board, which brings the question of institutions into the discussion.

There are three high ranking school board members, Hare, Northrup and Thayer. Thayer is in the high center of the chart. The medium to high importance points and low to medium contacts position of these people is reflective of the situation of non-professionals in decision-

CHART Z-1

PORT ANGELES IMPORTANCE & CONTACTS CHART BLOWUP



making positions for professional organizations. The same type of results are found in the position of hospital board members in health care studies with the importance--contacts research. The lack of technical expertise and daily contact with the education professionals tends to place these people in a responder, reactive role. It is difficult for the non-professional in this position to take initiatives in policy making because of the information and status deficits of their situations. Thayer, the school board president, is a partial exception to this problem. He is the business manager of the community college which gives him both a high level of contacts and a degree of professional expertise, particularly in financial matters, which puts him in a different category than the other members of the school board.

Shifting to the medium to high contacts side of the chart one finds the bulk of the School District 21 professionals and staff. The persons with high contacts and low importance cluster around the area defined by 6 average contacts per month; they are expected to impact on the day to day operation of the system, but not on the larger policy questions or the direction and nature of the educational system. On the other hand, that set of people, starting with L. Kinney and S. Hartmann, and moving up and to the right all the way to Scarr, the superintendent, are the people who combine the high contacts and importance points necessary to be able to take initiatives, to shape policy agendas and policy decision outcomes.

The high contacts, high importance points people are the ones with the information base and the attributed influence necessary to move or not move the system in terms of the questions of its nature and overall direction. Their advantages mean that others in the system are in the position of responding to what these people do and don't do. The professional - non-professional split tends to intensify this situation. The makeup of this set is therefore revealing about the nature of the educational system in Port Angeles. The top people in this set are all central administrative people. Scarr is the superintendent and Horne is the assistant superintendent. Sleeper is the business manager. B. Kinney is the reading and federal program coordinator and Slehofer is the curriculum consultant. Williams, the high school principal, and Hartman, the the president of the teacher association, are both members but of lesser importance. This group, primarily the central administration, is the one seen as having the initiatives in shaping the education system in Port Angeles. This makeup, rather than any number of alternatives involving more teachers and principals or involving some citizens, indicates the unique nature of this education system.

In and of itself the importance and contacts chart is a valuable analytical tool which the researcher can use with great effectiveness. But the importance and contacts chart is also a tool which when used properly in the feedback process will serve as a stimulus for the

sharing of information and impressions about the educational system and the community by the community member. The community member who is fairly well informed about the educational system will be able to engage the data and to explore with the researcher why the patterns on the importance and contacts chart exist and what changes will be occurring on it with the passage of time. This dual nature of being both an analytical tool and a stimulus for the sharing of insights by the community member is something that the importance and contacts chart shares with the final two data analysis techniques that are applied to this data; the molecular charts and the sector charts.

Molecular Charts

The previous data presentations have all been based on the total contacts and the total importance points array; what the 53 respondents to the I-C questionnaire said as a group about each person on the I-C list. The data arrays and the Importance and Contacts Chart tell us how individuals are collectively perceived within the education system. They do not tell us anything about perceived relationships between individuals and groups. The next two data presentations, molecular charts and the sector chart, deal with those relationships. They are based on what individuals and groups said about each other through the importance and contacts data.

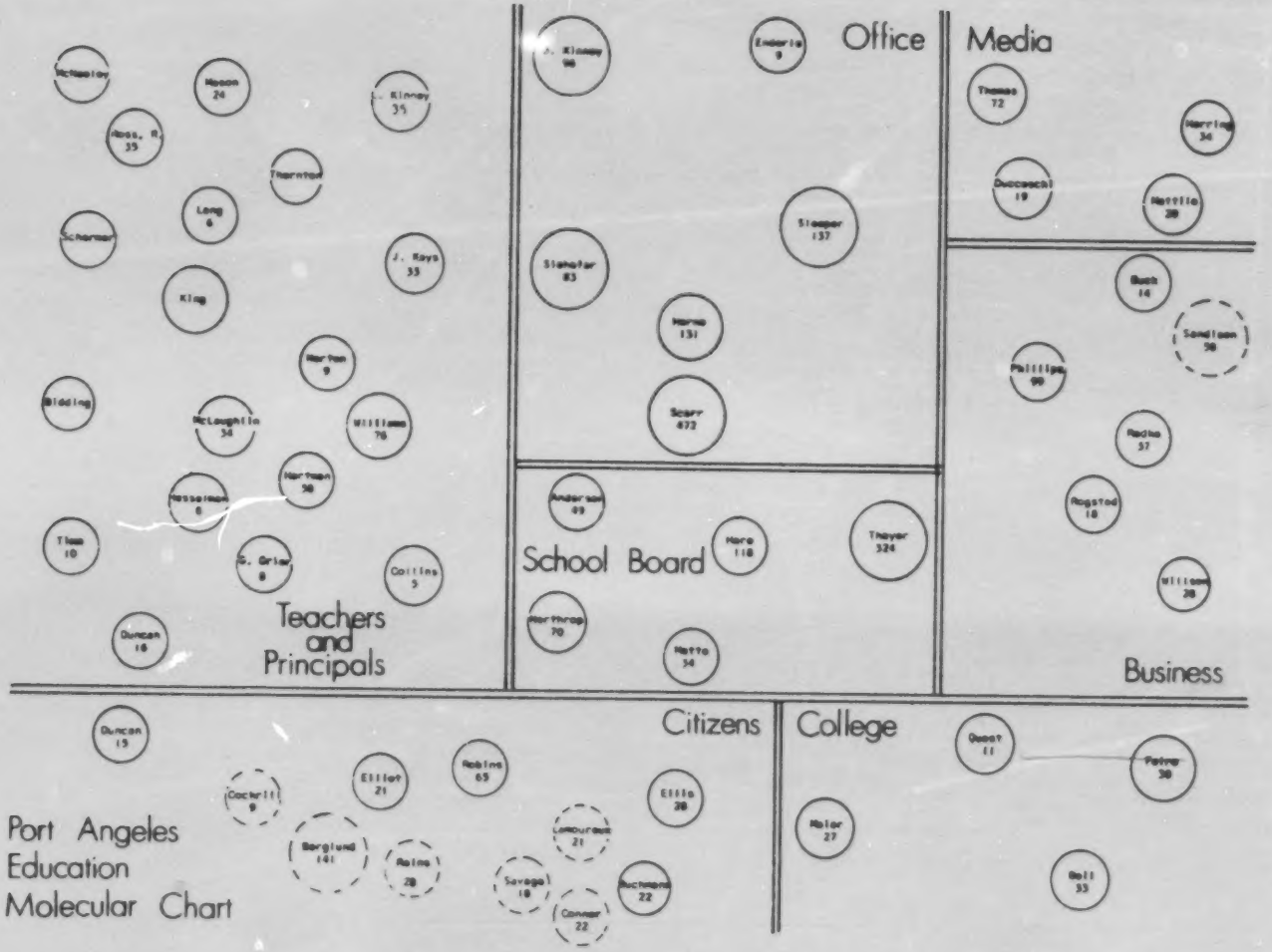
Skeletal Molecular Chart

The skeletal molecular distribution of influentials for Port Angeles is presented in Chart 2-2. It has been divided into seven sectors: teachers and principals, superintendent's office, school board, media, business, citizens, and college. The choice of the particular sectors is a function of both the clustering of the individuals who fall into the reciprocal two-person groups that are the basis for the charts and the researcher's judgements based upon his debriefing with salient leaders in the community. The arrangement of the sectors is dictated by the patternings among individuals as linkages cross sector lines.

The circles on the molecular chart represent the individuals from the top fifty places on the combined importance and contacts lists, (though a person who was interviewed but who did not find his way into any two person groups is not placed on the chart). The size of the circle is determined by the number of linkages the individual has with others on the chart. The individuals are placed in the sector which corresponds to their primary education activity or basic group identification. Thayer is placed in the school board sector even though he is the business manager of the community college, for example. There are some individuals in the citizen and business sectors who were not

CHART 2-2

PORT ANGELES EDUCATION MOLECULAR CHART



interviewed but who are identified by the data and the respondents as being salient in some way to the educational system. These persons are identified with dotted circles. There are two individuals who deserve comment who were not interviewed; Berglund and Sandison. These persons both ranked very high in importance points. They also rank very low in contacts. Many of their rankings by others could not have resulted in linkages on the molecular chart because those ranking them did not also attribute any contacts to them. Our past experience with this research technique tells us that persons in the high importance and low contacts position do not "show" on the molecular charts to any degree. We cannot dismiss entirely the chance that the data from these two individuals would change the interpretations and conclusions that follow, but we are confident that the molecular charts do represent the significant communication and influence patterns within the educational system.

Communication Chart

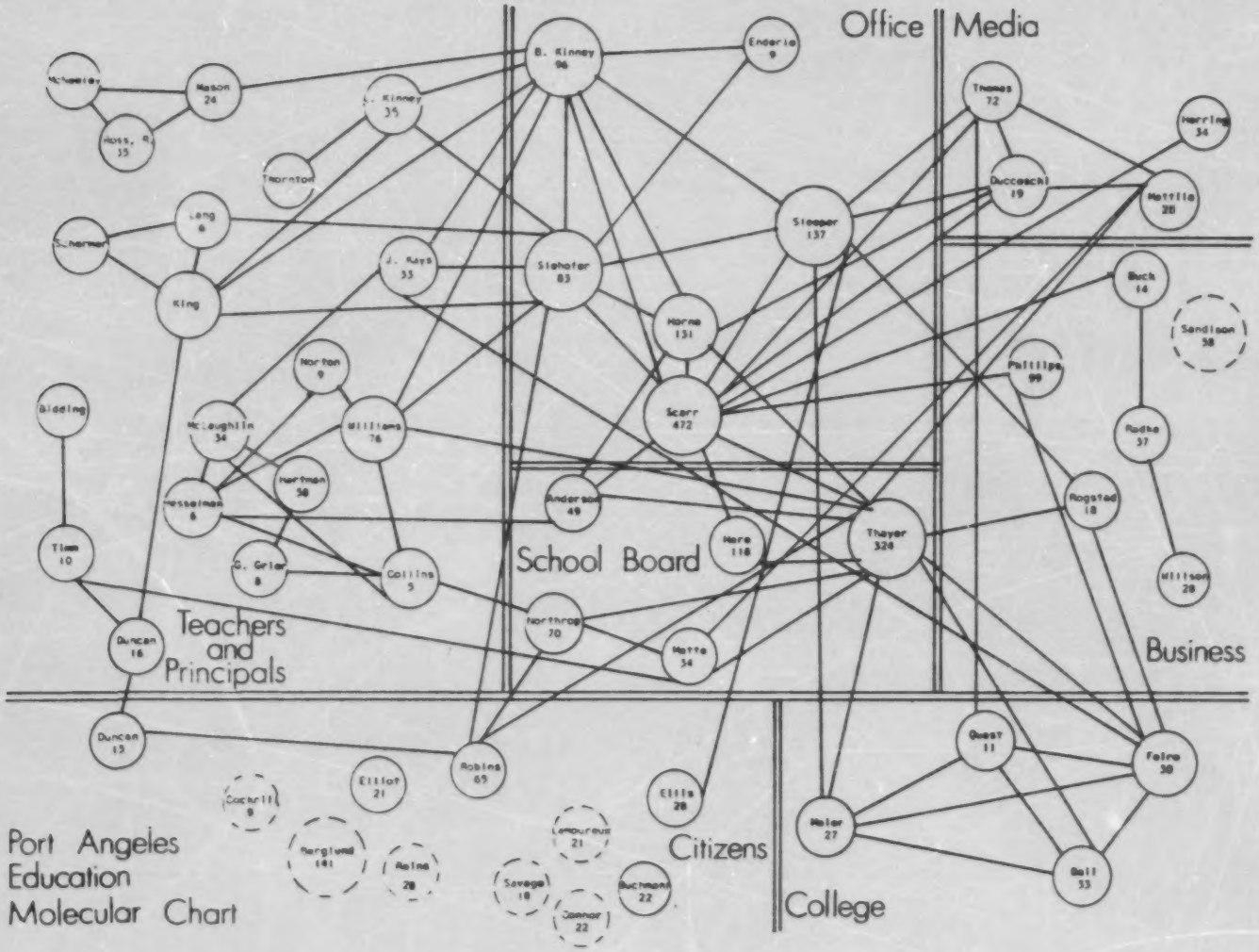
Chart 2-3 is the communication chart for the Port Angeles education system. The lines between individuals are based on all three of the possible reciprocal linkages: high contacts, ranking with at least one contact, and a mixture of high contacts and ranking. The following analysis focuses on the pattern within the sectors and the pattern between the sectors and the overall picture of the education system which is suggested by the communication chart.

Looking first at the teacher-principal sector and the superintendent's office sector, there is an important set of linkages from principals to B. Kinney and Slehofer who, in turn, are linked to Scarr, Horne and Sleeper. Only one teacher is linked to the superintendent's office sector, again through Slehofer and B. Kinney. This pattern can be contrasted to the linkages between the media and the superintendent's office sector where Thomas and Duccesschi and Herring link directly to Scarr, Horne and Sleeper without any intermediary linkages. The same type of direct linkages between sectors can be seen between the school board sector and the superintendent's office and the college sector and the superintendent's office. A slightly different pattern is seen between the college and the school board sectors where those in the college sector all link to Thayer, who is both the school board president and business manager of the college.

Looking within the individual sectors a number of patterns also are evident. The superintendent's office sector and the college sector illustrate a certain amount of integration, with most of the people in these sectors linked to each other. The pattern in these sectors stands in contrast to a sector such as the business sector where there is little linkage between people. Somewhat less highly integrated are the school board sector and the teacher-principal sector. The

CHART 2-3

PORT ANGELES EDUCATION MOLECULAR CHART



school board members are all connected to Thayer, but only Northrup and Matte are also linked to each other. The implication is that the communication network for the board depends on Thayer.

The teacher-principal sector shows clusterings between principals (King, Schermer, R. Lang) and between teachers and principals in a particular school (Williams and the senior high school and Mason and one of the junior high schools).

Looking at the Port Angeles Communication Chart in its entirety, one gets the impression that it focuses around the school board and the superintendent's office sectors. One node is formed by Scarr, Horne, and Sleeper and another by Slehofer and B. Kinney, both in the superintendent's office sector. The key node is probably the one constituted by Scarr, Horne, and Sleeper. This node connects with the school board, the media, the business community, and through Slehofer and B. Kinney, the principal and teachers. This picture of concentration in the superintendent's office and the school board will be seen again below in the influence chart.

Influence Chart

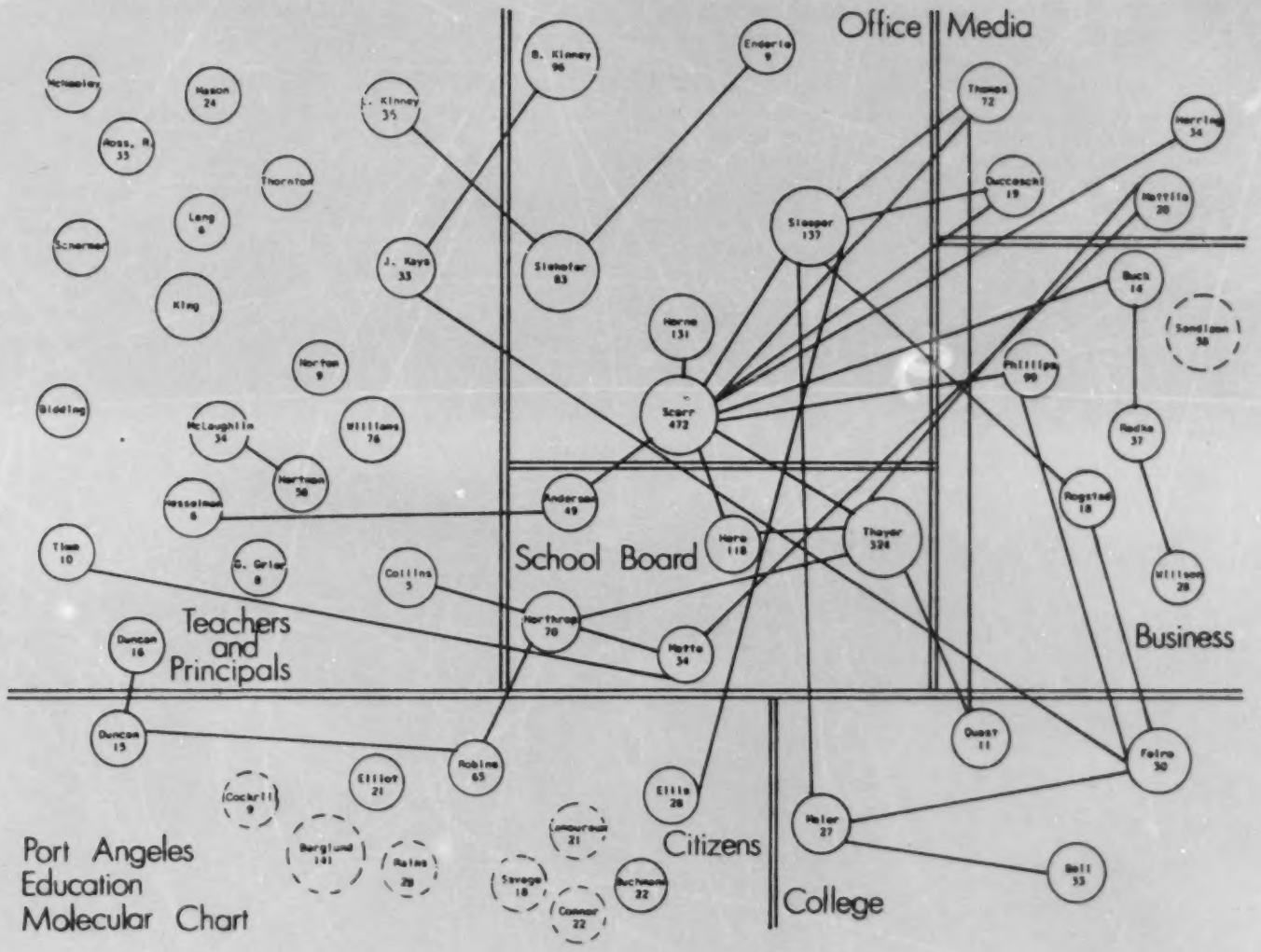
The perceived influence linkages for the Port Angeles Education system are found in Chart 2-4. The linkages are based on reciprocal importance rankings with at least one reciprocated dlad. A comparison of this chart with the communication chart shows that many of the communication linkages do not appear as influence linkages.

In contrast to the communication chart there is only one link between those in the teacher-principal sector and the superintendent's office sector. The important point to remember is that a linkage on this chart is based on reciprocal rankings. If, as was the case, teachers and principals ranked persons in the superintendent's office who did not rank them in return, then no mutual or reciprocated influence linkage is said to exist. Thus, Slehofer and B. Kinney do not have many influence linkages in spite of their high number of importance points. They did not reciprocate many of the rankings they received, nor did those they ranked in turn rank them. The linkages from the college sector primarily involve one individual, Ferio, whose role will be discussed below. The communications linkages between sectors noted earlier persist as influence linkages between people in the school board sector and people in the superintendent's office sector. The people in the superintendent's office sector are still linked to the media and to a lesser extent the business sector.

In looking at the influence chart as a whole, one again sees a concentration in the school board and the superintendent's office

CHART 2-4

PORT ANGELES EDUCATION MOLECULAR CHART



sectors with the superintendent's office also being linked to the media and business sectors. This school board--superintendent's office--business and media pattern will also be seen on the sector chart. Within this broad pattern there are also some distinct nodes which are of interest. Thayer is the center of the school board sector, but the superintendent, Scarr, is also in a strong position in relation to the school board. Additionally, the triad between Scarr, Thayer, and Hare indicates a combination that can and does have great impact on the system. In the superintendent's office sector Scarr and Sleeper are the key individuals with linkages to persons in the media and business sector.

Two other patterns should be noted. First, Ferio, the dean of instruction at the college, serves as a node with 4 linkages. He is a person associated with two projects which are relevant to the business community and the public schools, a community track and proposed marine biology-aquarium project. His position tends to support the link between "downtown" and the superintendent's office. The other node involves Northrup, a new member of the school board. She was previously active in the citizen's advisory group and the chain connecting Northrup - Robins - Duncan indicates a linkage from the school board into citizen and teacher concerns which is not present in other parts of the influence chart. What changes will take place over time can only be conjecture at this point.

Combination Chart

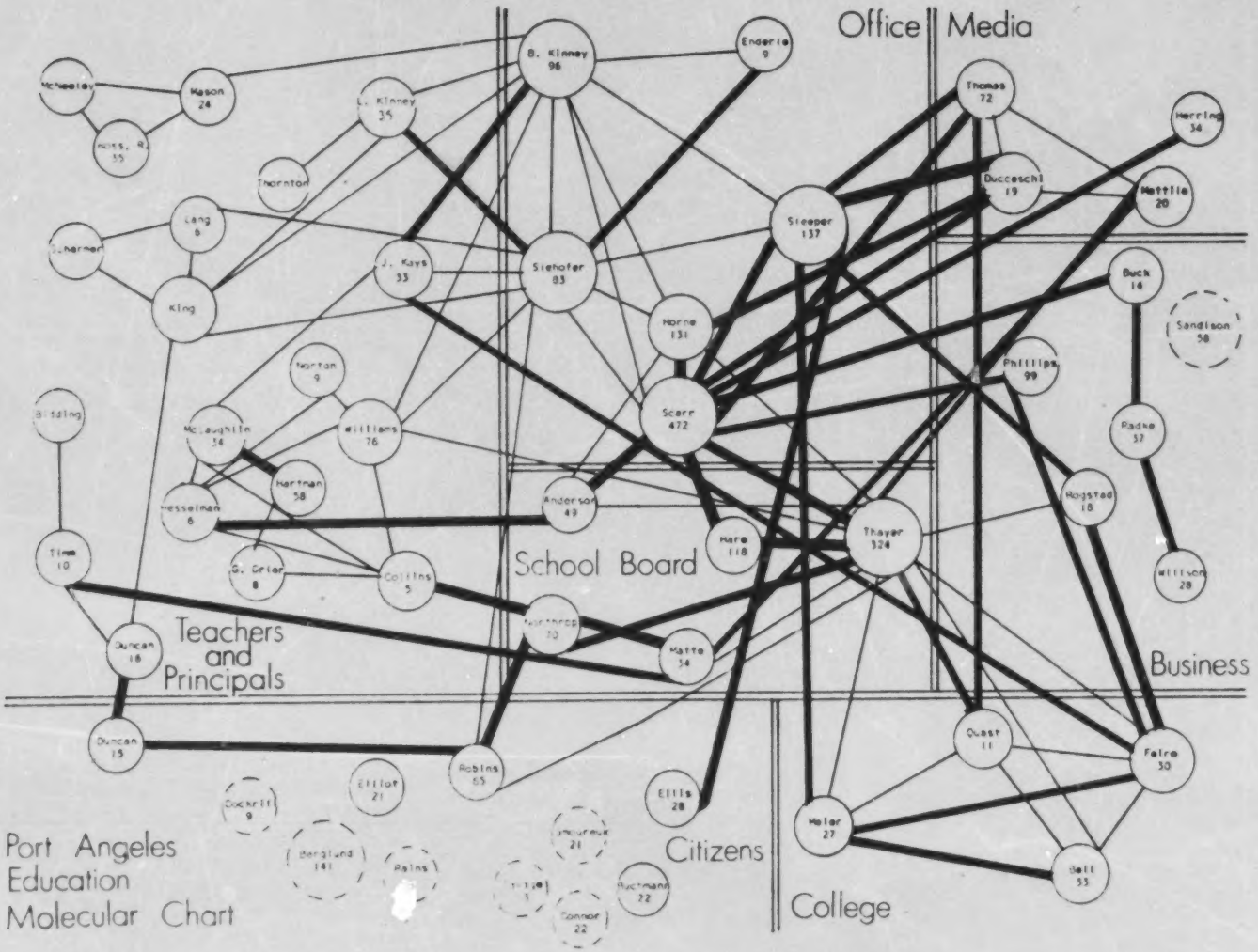
The influence and communication charts are combined in Chart 2-5, the combination chart. This chart illustrates again the overall pattern of school board - superintendent's office - media and business influence linkages. The communication lines show that the principal-teacher-citizen, and college groups are not isolated from these primary groups. A good deal of regular interaction is indicated, but in terms of the influence patterns the superintendent's office and school board key on each other and the superintendent's office and the business-media also key on each other. This pattern will be seen again in the presentation of the sector charts.

Sector Charts

The molecular charts deal primarily with what individuals said about each other. In the sector chart we turn to a consideration of what categories of people said about other groups and themselves as a group. The sector chart provides a basis for considering the salience of groups in relation to each other. The foundation differs somewhat from the molecular chart in that all of the influence rankings are taken into

CHART 2-5

PORT ANGELES EDUCATION MOLECULAR CHART



account, not just those that are reciprocated. As was explained in the section on sector charts in the methodology discussion, the respondents to the I-C questionnaire are assigned to a sector and then the influence rankings of those in each sector are examined as to who they ranked in terms of the seven groups. The results are expressed in terms of the percentage of possible rankings given to each sector by all the other sectors and by themselves.

Table 2-5, the sector linkages table, expresses this data in table form. The first line, for example, indicates that the respondents from the superintendent's office ranked themselves, people from the school board and to a lesser degree people from the "downtown." The percentages of 18% or more have been underlined as "significant." This is based on both a break in the array of the data and the reactions of community leaders to the data. The sector linkage table shows a uniform high ranking of the superintendent's office and the school board groups. Beyond that the downtown group receives high rankings from themselves and two other groups. The citizens are highly ranked by themselves and the principals while teachers are highly ranked only by themselves. The principal and the college sets are not highly ranked by any of the groups, even themselves.

The high ranking of the superintendent's office and the school board and the linkages between them and between the superintendent's office and the "downtown" are consistent with the individual data from the molecular charts. The high ranking of citizens by principals probably reflects their sense of being vulnerable to constituent pressures, particularly in problematic situations. The high ranking of teachers by teachers and citizens by citizens is understandable, but the low ranking of principals by principals is an expression of a lack of positioned esteem that is somewhat surprising. The data was confirmed by some of the principals in the feedback sessions as being quite accurate as it pertained to them, however.

Taking the relationships which are underlined on the sector linkage table as representing one way influence linkages, the data can be displayed in chart form using the format of circles and arrows we have relied on in the molecular charts. The sector chart for Port Angeles, Chart 2-6, shows the one way linkages by representing each section with a circle and drawing arrows from that sector whenever a significant inter-sector linkage index appears. If a group attributed influence to itself at or above the 18% cutoff point then an * was placed inside the circle to represent this.

The reciprocal linkages between the superintendent's office and the school board and between the downtown and the superintendent's office are present, as in the molecular chart. But one can also see the relationships which are not reciprocal. The citizens key on the

TABLE 2-5

RANKING OF ONE SECTOR BY ANOTHER

(Expressed in Terms of the % of Possible Rankings)

Superintendent's Office

Supt. Off.	Sch. Board	Teachers	Principals	Citizens	Downtown	College
40%	33%	8%	5%	13%	21%	3%

School Board

Supt. Off.	Sch. Board	Teachers	Principals	Citizens	Downtown	College
28%	48%	12%	5%	14%	10%	8%

Teachers

Supt. Off.	Sch. Board	Teachers	Principals	Citizens	Downtown	College
41%	30%	26%	7%	11%	7%	2%

Principals

Supt. Off.	Sch. Board	Teachers	Principals	Citizens	Downtown	College
41%	36%	3%	9%	26%	12%	1%

Citizens

Supt. Off.	Sch. Board	Teachers	Principals	Citizens	Downtown	College
32%	51%	7%	2%	24%	14%	1%

Downtown (Business & Media)

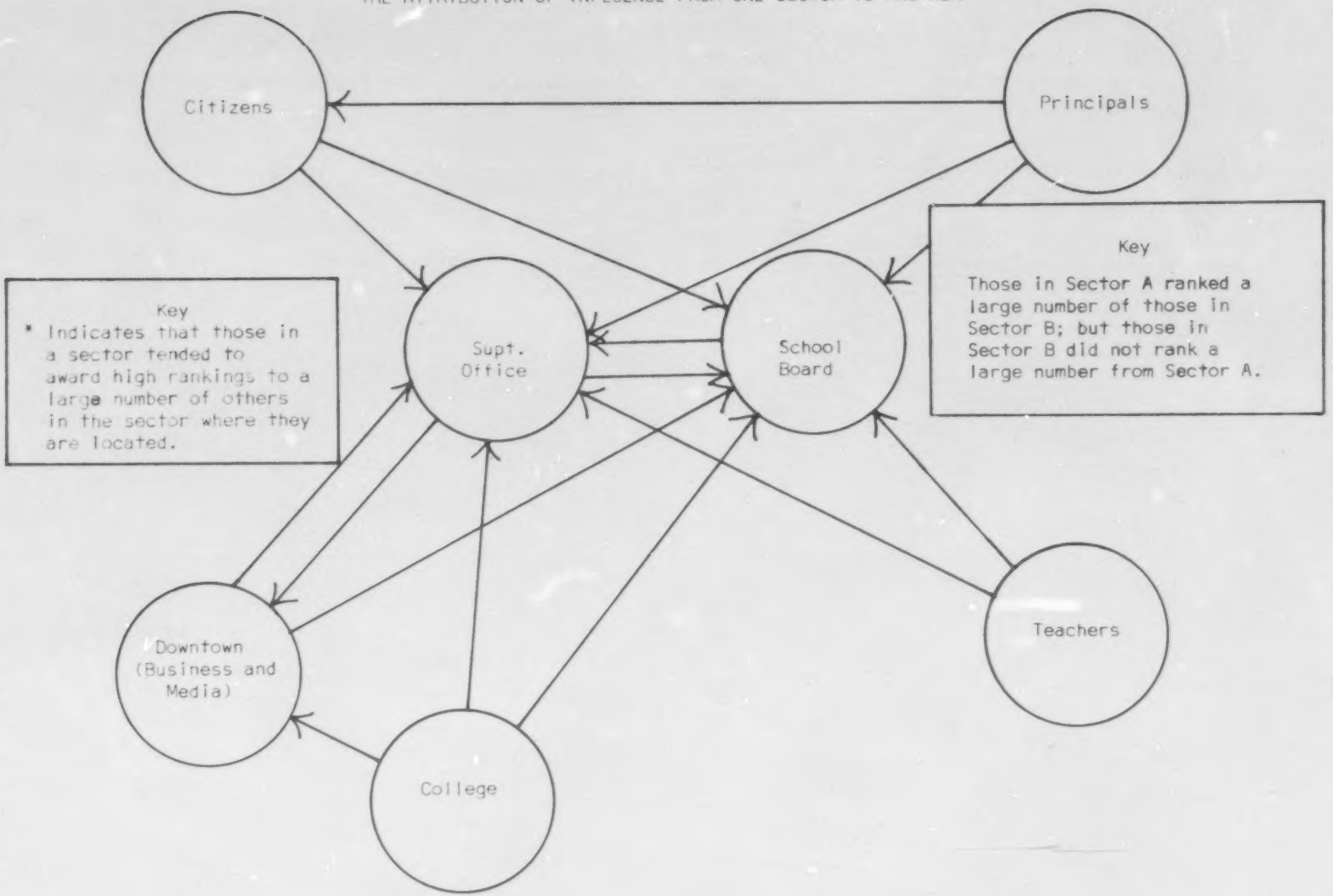
Supt. Off.	Sch. Board	Teachers	Principals	Citizens	Downtown	College
30%	40%	7%	7%	12%	18%	10%

College

Supt. Off.	Sch. Board	Teachers	Principals	Citizens	Downtown	College
25%	20%	3%	5%	15%	30%	16%

CHART 2-6

THE ATTRIBUTION OF INFLUENCE FROM ONE SECTOR TO ANOTHER


Citizens
Principals
Supt. Office
School Board
Downtown (Business and Media)
Teachers
College
Key
* Indicates that those in a sector tended to award high rankings to a large number of others in the sector where they are located.
Key
Those in Sector A ranked a large number of those in Sector B; but those in Sector B did not rank a large number from Sector A.

superintendent's office and the school board, not the principals or the teachers. It should again be noted that we are not talking about average citizens but the active citizens who are involved with the educational system at a policy level. Teachers and principals key on the school board and the superintendent's office, with principals also keying on the active citizens and thus showing a greater "constituency" awareness than the other two groups of education professionals. Of equal importance are the linkages that are not there such as one between the teachers and the principals.

The importance of the molecular charts and the sector chart as analytical tools lies in the insights they give the researcher into the education system as it is perceived by those in the community. Different patterns in the molecular charts or the sector charts would be indicative of an educational system which varied in form and structure from the one in Port Angeles. The information gained from these charts allows the researcher to identify the people who are active and salient in the education system and the patterns of interaction which give it substance. Beyond their strength as analytical tools the molecular and sector charts are also valuable tools in the feedback process. Just as with the importance and contacts chart, the respondents are able to take these charts and talk about them as if they were the educational system. They can in the proper setting stimulate the community member to share understandings and insights about the education system with the researcher and to explore the nature of that system with him. It is this dual nature of an analytical tool and a stimulus for sharing and understanding that makes the influence analysis provided by the importance and contacts researcher so powerful when properly used by those who seek to work with those in communities toward local understanding and initiation of program change.

APPLICATION OF INFLUENCE ANALYSIS TO COMMUNITY PROBLEM-SOLVING

There are some premises that underlie this research technique which, when elucidated, bring it into a more meaningful focus. In this section we shall indicate how the capacity to identify the network of policy-making influentials is intended to bear on the challenge to facilitate community change.

Premise #1:

> The formal positions that constitute the authority structure of a program of action such as education are most relevant to the management of its day-to-day affairs. Matters such as whether policies

> ought to be changed, whether those holding formally designated positions ought to relinquish their duties, whether the mission of the education program in the community should be redirected, matters that impact upon the whole of the community, cannot be adequately decided by the cadre of professionals who are employed to preside over the operation of the education program in the community.

It is more the case with education than with any other local program that our capacity to cope with the future is quite literally at stake. It is difficult to imagine a local program that is more intimately linked to the welfare of the community as a whole and to its young people in particular. If those who are matriculating our schools today are not thereby prepared to deal with what tomorrow shall bring, we are destined to find ourselves in difficult straits indeed.

Local control of education in this country has always been predicated on the supposition that here, more than with any other community program, the people should have the capacity for directly influencing what is done (as well as what is not done). Locally elected school boards have been the customary device through which we have sought to implement this objective. By and large local school boards can be said to have served us well in this regard. It is part of the genius of the American system of government that tradition has come to dictate that these boards should be in constant consultation with a wide variety of individuals in the community. Anyone familiar with education in this country knows that this is universally the case and that it is through the outreach provided by this consultative process that education has been able to retain the immediate links it has to nearly every sector of the community in most of our urban centers.

While the indigenous nature of the web of interrelationships through which the school board, and others in the school system, attempt to maintain reliable links to the other sectors of the community is undoubtly the most desirable and efficacious way of achieving the interfacing of the school system with the rest of the community, it presents a substantial drawback to anyone from outside the community who would come to the community seeking to work with its members in developing the policy making process of a local program of action. The outsider cannot know who knows whom, who is concerned with what; and who is going to be looked to in the ranks of those who have come to be accepted as policy-making influentials in education when a particular problem presents itself to the community.

There are communities where the chairman of the board of

education serves as the person that all of those interested in policy-making contact when difficulties emerge; but this is by no means universal. There are also communities where the superintendent has come to serve as both chief administrator of the system and leader in its policy-making process; but this is by no means universal either. Though we do not know just how frequently either of these arrangements occur across the nation, it seems clear that neither of these arrangements or any other variation is dominant.

The most widely relied upon arrangement appears to be one where there is a core of individuals who are closely tied to each other in a circle of leadership and who, having earned the respect and trust of their colleagues, preside over policy-making as a corporate leadership group. Around this set of individuals there will be several satellite groups who are concerned with one or another of the components of the program (athletics, continuing education, building programs, etc.). When someone feels a problem is developing he seeks out the person to whom he has the most ready access, in the appropriate satellite group. Whether his concern is acted upon is very much a matter of his own status and credibility with the person he talks to, the way he formulates his concern, the way the other individual responds to this, etc.

For those who live in the community this arrangement tends to work well and easily. For those who come from outside the community, there is usually no alternative but to talk with those who hold formal positions of authority and hope to be referred on to those individuals who may not have any formal role in the professional structure of the educational system but who may have come to occupy a key decision-making position in what we have come to think of as the network of policy-making influentials.

The influence analysis technique has been developed to enable outsiders, such as ourselves and the staff of groups such as the University of Washington's Division of Community and Organization Development, to find their way to those whom the community has come to look to for policy leadership, without relying on trial and error or the goodwill of those who hold the formal positions of authority. For those who come to the community, not as problem solvers or "experts", but as outsiders who want to work with community members in developing and improving the policy-making processes and capabilities of the community, this type of knowledge is critical. Without it an effective and efficient penetration of the community and the program sector will be most difficult, or even impossible.

A second function of knowledge such as this is even more relevant to enabling outsiders, such as ourselves, to be of service to the community. While no one would think of operating a school system without a careful and reliable accounting system, and while no one would

think of going without careful records of all books and materials purchased or complete records of all those who are employed by the system, it is almost universally the case in cities across the nation that there is no adequate record kept of mistakes made by those making policy for the school system, or of their successes. One must hasten to add that for those who reside within the community this presents no difficulty for they have had the benefit of reading the local newspaper and watching the local television news broadcaster over the years and without knowing it each resident of the community is a casual historian of educational affairs.

And if this is the case for the average citizen it is even more the case with those who have invested themselves in leadership activities in relation to education. Between them they know virtually everything that is worth knowing and, as many of them are quite ready to admit, a lot that is not really worth knowing In addition. We hardly need repeat the predicament that this leaves the conscientious outsider in, however. He can quite easily discover what is being done at the time he is on the scene, but as to how things came to be the way they are, he must remain virtually in the dark. That this is not a situation that a responsible professional can easily abide goes without saying.

Hence, the identification of the network of policy-making influentials in education comes to provide a means whereby an outsider can make a meaningful plan for obtaining an oral history of recent developments in the educational system. Without this he could spend many weeks seeking to discover who to talk with and run the risk of garnering nothing more than a jumbled understanding of what has come to pass for his efforts. This brings us to a second premise.

Premise #2:

The capacity of local leaders to deal effectively with the major problems facing the educational system is heavily influenced by the cohesion and openness of communication within the network of policy-making influentials.

If an outsider is to be able to bring his competence to bear in any useful way he is going to have to discover where the tensions, if any, are that could short-circuit communication within the network. Reliable knowledge of its shape and patterning becomes an immensely useful resource in coming to understand where communication might break down, where it might fail to cycle through, and where it might be filtered or transformed in some way by long standing contention or sudden bursts of interpersonal stress.

Those who have been involved in leadership roles in a community for any length of time can testify to the kinds of difficulties that occur when outsiders enter their city and attempt to take part in understanding its problems without (a) coming to a full understanding of its recent history and (b) coming to know most of those who have been grappling with local problems on their own. It is precisely because we have seen so much of the absurdity that follows the intemperate machinations of "experts" that we have opted to take the time (approximately 60 days) and go to the effort (approximately eight man weeks) to develop a fully scientific analysis of the network of policy-making influentials as a basis for our work.

With this much about the thrust of our effort having been set out, the third, and crucial, premise upon which it is based can be presented:

> Premise #3:
>
> Basic changes in local programs of action, by which we mean changes that are lasting in their effect and which have the impact of modifying once and for all time to come the kinds of outcomes it produces, can be defined only by those on the scene, only by those who reside in the urban center where the problems exist.

The reasoning behind this premise is simple. There are, we hold, no determinative "solutions" to local problems. Program dysfunctions are not like arithmetic problems, puzzles for which there is one correct answer. They are difficulties that erupt in our public affairs and they are not only of public concern; they cannot be dealt with excepting that those who have to "live" with the way in which they are resolved have the opportunity to "have their say" as to what kinds of accommodations should be made in dealing with them.

One should hasten to add that this is not to suggest that there is no place for expertise and professional capacity in forging resolutions for program difficulties. But we have seen not dozens but hundreds of cases where the recommendations of a set of consultants brought into a community to help solve some problem have failed to capture the preferences of those who live there and hence come to be little more than distractions from the business of hammering out a really pertinent line of response to local difficulties.

In our view there are few local problems of any consequence which can be satisfactorily resolved on the basis of purely technical knowledge. The best way to resolve most important problems that arise

in local programs of action come to be the somewhat inchoate arrangements that may not be fully reasoned through or rational, in the eyes of the expert, but which embody most of the real concerns of those on the scene. It would be folly to hold that rationality has no place in resolving program difficulties, but it would be ridiculous to hold that solutions that are nicely logical are the most to be desired. Our experience suggests that it is precisely because outsiders cannot have the kind of feeling for local situations that would enable them to identify the most relevant, most promising configuration of values upon which to base change that they rely so heavily--all too heavily in most cases--upon simple-minded logic.

The central thrust of this step--delineation of the network of policy-making influentials--is to identify those on the scene who have acquired a deeply seated feeling for the problems and promises in the program as it exists. This is certainly not the only criteria against which to evaluate the character of changes that ought to be considered as ways of resolving local problems but it is one of the critical ingredients and it is to be found primarily, if not exclusively, in the minds and hearts of those who have lived with the local situation long enough to have come to intuitive insights into its character.

Not being among those who are content to say that the solution to every problem lies hidden in the minds of those who are a party to it, we do not care to hold that once those who have come to these hard-earned insights are identified one has only to get them together, exhort them to set aside their parochial views and seek to fathom the true interests of the community as a whole and then wait for the yeast of goodwill to produce an infallible solution.

The contribution that those who have labored on the scene can make to the resolution of their own problems varies a great deal. When there is a history of conflict, bickering, bad feeling and petulance among local leaders, it is unrealistic to assume that they can somehow step beyond the constraints of this kind of desultory behavior. Even when there is a history of goodwill, earnest seeking after honest accommodations and sustained effort, it does not follow that all the pieces for a valid solution to local problems exist and have only to be found.

It is the very essence of change in the urban center in these turbulent times that problematic situations can become so mercurial that they mutate in character over a period of time as short as a year. Those on the scene simply may not be able to keep up with surges of structural disintegration or grass roots agitation. It is more and more the case that the pace of social change in our urban centers has reached a level where one's perspectives have to be discarded every five years or so. There may be a critically important contribution made by resourceful, reinforcive outsiders in assisting those on the scene to accept the possibility that in at least some important respects they cannot assure

that they understand their community merely because they reside within its boundaries.

This is a painful conclusion to reach; one that anyone has the right to resist. Yet if they resist intemperately they run the risk of acting irrelevantly, even foolishly. There is a need, and a very real need, for outsiders who can offer challenging queries and insightful suggestions as to what might be happening. But this is not enough in the case of the more intractable local problems, and it is for this reason that we have devised the techniques reported on in later chapters in this discussion. The essential need is to harness the power of behavioral science to the task of assessing what in fact has gone awry in local programs of action.

A substantial investment of time and effort is required to generate the findings science can offer. But these shall be even more irrelevant than the recommendations of the outside consultant unless those who have the insights gained through experience have taken their place in launching the scientific analysis. It is only they, after all, who can provide the information science requires to do its work.

Ultimately, then, it is for the purpose of identifying the cadre of those on the scene who have earned a place for themselves in the ongoing operation of a program that the influence analysis is undertaken. Our whole strategy rests upon the premise that it is by fusing their insights within the confines of science and back-stopping this with the reinforcive efforts of people such as the staff of the University of Washington's Division of Community and Organization Development that we can begin to get a reliable fix on the true character of local problems.

Our experience with this influence analysis procedure in a dozen cities suggests that it is helpful in a number of ways:

1. Not everyone on the local scene will have had the opportunity to gain a reliable understanding of "who belongs where" in terms of the intricate network of program leadership. Our influence charts reinforce the knowledge of those who have gained this understanding and is usefully informative to those who are newer participants on the scene.

2. By the nature of the analysis it suggests those who are most often looked to by their colleagues. Quite naturally these are the individuals to whom the outsider should turn first for they are the people who have had the experience of dealing with thousands of requests from their friends and associates; in the highest sense of this

term they are leaders and are better equipped to help outsiders than anyone else on the scene.

3. It is both impossible and undesirable for all of those concerned with education to be linked into each and every component of the program. This influence analysis also indicates who is most deeply involved with which portion of the program, thus enabling the outsider to find his way quickly and with ease to those on the scene who have detailed knowledge and experience with specific elements of the total program.

4. In many communities there has never been occasion for anyone to attempt to derive a total or overall "picture" or representation of the program as a system of action into which go inputs and from which flow outputs. This becomes one of the things anyone who wishes to come to a reliable understanding of the program must accomplish at some point. This analysis serves this end in two ways: first, it indicates who to talk to in gaining an understanding of the parts, and second, it indicates who to debrief with to ascertain whether the formulations of the outsider are reliable.

5. What all of this comes to mean is that there are payoffs for both the outsider and those in the community. On the one hand, the outsider can work efficiently and hence productively and satisfyingly in the community. On the other, it comes to mean that there is a minimum of wasted motion between the outsider and those on the scene and a maximum of beneficial impact on each other. Those in the community come to know that when they talk to the outsider that he is going to make a contribution and is not going to be wasting the time of those in the community or his own time.

6. Program change is a risky, slippery business at best. We tend to fail ourselves here more often than we succeed. The use of the influence analysis almost invariably means that the staff person gets off to a solid beginning toward this end. A well-taken first step is not the equivalent to success, but it is certainly an important kind of movement toward that end. It is from solid foundations that significant changes can be launched.

CHAPTER III

COGNITIVE MAPPING RESEARCH

In Chapter Two, the use of a method for identifying the key policy-making influentials in a program sector was described in terms of its application to community development and program change. In this chapter, a companion and complementary research effort, which followed the first step in the analysis of the Port Angeles education system, will be examined: that of cognitive mapping.

Cognitive mapping research builds on and adds a new dimension to the influence analysis. It is intended to allow the consultant to identify the way local leaders perceive the functional structure of the program. How, in their eyes, do the components of the program fit together? Which elements are most central, which most peripheral? By comparing the cognitive maps of those key policy-making influentials identified through the influence analysis, the researcher is able to ascertain how leaders in different places in the influence network view the organization of the program, and thus gain some insight as to what they might find most crucial to deal with.

THE INTENT AND BACKGROUND OF THE COGNITIVE MAPPING RESEARCH

Why Map Cognitions?

Cognitive mapping rests on the concept that individuals in a community have a set of stable conceptions concerning the relative salience of the component parts of a program and how these parts fit together. These conceptions serve as "cognitive maps," as representations from which leaders derive their understandings of what will occur during the normal operation of the program. It is by making deductions from these conceptions that they estimate how a particular event might impact upon the program. It is by coming to understand how different leaders frame their anticipations that the consultant equips himself to aid them in dealing with new kinds of problems. Just as an accurate understanding of the network of the key policy-making influentials in the program is essential for the consultant, as an outsider, to discover how to relate to community leadership, a reliable grasp of the way those individuals view the program of action, in terms of its normal modes of operation, enables him to relate to problems that threaten its continued effectiveness.

As with the influence analysis, the goal of the cognitive mapping research is to acquire an "insider's" view of the program through the use of behavioral science techniques and tools. And, as with the influence analysis, cognitive mapping research is carried out through the use of a highly structured research process. Because the researcher relies upon scientific procedures, he comes to be seen as doing very different kinds of things than most consultants or participant observers or management experts would do. The consultant, for example, often enters the community armed with "answers" to specific problems; cognitive mapping research is a purely exploratory procedure aimed at helping those in the community to better understand themselves and their program. The participant observer literally becomes a member of the community in order to gain an insider's knowledge of it, but in doing so he must forego the unique kinds of initiatives an outsider can take. The scientific researcher does not even attempt to build an empathetic relationship to a community; in the first instance it is a source of data.

Background: Theory and Methodology

The vehicle for conducting cognitive mapping research is a card sorting technique. The theory that underlies it assumes that community members have a set of perceptions about the program sectors in which they are involved which are fused together into a functioning whole and within which are embodied the conceptions from which their actions derive. The extent to which these perceptions are reliable and are shared by others in the community becomes a critical dimension of the effectiveness of any given individual's activity as a policy-maker.

The basic assumption underlying the mapping of cognitions is that an individual's perspective toward policy making is constituted of complex conceptions of roles, organizations, programs and facilities, which, taken together, constitute the program as a system of action. different individuals perceive these component parts or "artifacts" as fitting together in different ways. Thus, the data taking consists of having individuals sort a deck of cards that represents the artifactual components of the program in terms of questions representing its basic functions. For example, in an educational system, two people may see the principals as being relevant to education in general, but only one may see them as being critical to the activity of financing education. Their cognitive maps differ in a modest but potentially significant way.

The antecedents of cognitive mapping are found in several disciplines. The concepts of George Kelley concerning personality constructs provide a theoretical foundation.[1] The whole body of research and theory concerning Q-sorts has supplied considerable methodological and theoretical stimulation.[2] An early version of cognitive mapping owed much to the application of Q-sorting to a program of action. The research procedure described here derives from both the substantive

conceptions of clinical psychology and the methodological foundation of experimental psychology. Over time this particular card sorting technique has been designed to allow the researcher to examine a relationship between artifacts and activities.

Our technique has been five years in development. A prototype was developed for a health care study in 1971. Revisions of this earlier form were applied in a study of education later that year; this was followed by several more studies of health care programs in the period 1972-74. The Port Angeles Study is the first time that this technique has been used in an education study.

THE METHODOLOGY OF COGNITIVE MAPPING

The process of mapping cognitions begins with the identification of the roles, agencies, activities and facilities that make up the program of action being studied. Experience in using this technique has shown that for a community of 1,000 to 50,000, a deck of less than 35 cards is probably incomplete or too general; a deck of over 50 cards tends to be both difficult to administer and too complex for some respondents to sort well. In Port Angeles, a deck of 46 cards was settled upon after the reduction of a deck that was almost twice that size to begin with. A listing of the Port Angeles artifacts can be found on page 79 and can be referred to during the discussion that follows.

There are two interrelated ways of building a deck for a program sector. The first is to construct a tentative list of artifacts and then to ask a number of community members to review the list, adding, subtracting and ranking the items on the list as to importance. A second approach is to conduct a number of open-ended interviews with community members, asking them to describe the program as it operates in the community. The building of the artifact list is probably best accomplished by relying upon both of these processes. Having ready access to many of the most knowledgeable and salient members of the program sector, the researcher needs only to approach them to obtain a large inventory of suggestions. The researcher who has completed an influence analysis of a program sector using the approach described in Chapter Two is already prepared to construct a tentative list of program artifacts.

This list of artifacts will contain a number of categories. The first is roles, or more precisely, leadership roles. Examples from the Port Angeles study are "Superintendent of Schools" and "Senior High Teachers." The "Senior High Teacher" card illustrates the problem of how specific or general a card should be. Should there be one card for teachers; or separate cards for elementary, junior high, and senior high;

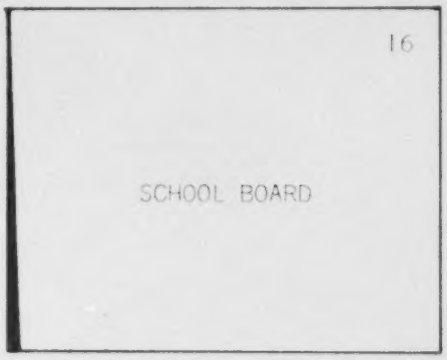
or should teachers be further divided into subjects such as math teachers and P.E. teachers? Experience from health care cognitive mapping studies and the opinions of community members led to the use of the three types of teacher cards in Port Angeles. At this point, we can see no systematic basis for making this decision.

The next artifact category is organizations. These may be program-related, such as P.T.A. and the teacher association, or general community organizations such as the chamber of commerce. Local institutions are an adjunct of this category. Examples are local governmental units and their federally sponsored counterparts.

Another category is that of specific activities within the program sector. Examples from education are division of the curriculum, such as math and science classes.

The final category is that of facilities such as the school buildings, libraries, gyms, and the like. This category proved to be the least satisfactory and a more recent study indicates that some cards could be collapsed or eliminated in this category. In each of these categories, choices as to the degree of specificity or generality of a particular card had to be made which were similar to those involving the example of the teacher cards discussed above. Intensive statistical analysis of the ways in which cards were sorted suggests that they can be refined through use in successive studies. The experience gained from this initial education study has already provided refinements that have been incorporated into other studies.

The artifact deck itself is made up of 2" x 2½" cards cut from index cards. The artifact name is typed in the center of the card and an identification number is typed in its upper right hand corner. An example is presented below.



The completeness and relevance of the artifact list is not lost on the respondents when they undertake the sorting task. It is not uncommon for a community member to comment on how well the list fits the community and on the ability of the research team, comprised of individuals who are not members of the community, to construct the artifact list in what seems to the respondent to be a short period of time. This type of reaction points out again how the power of scientific protocols and techniques gives both credibility and access to the researcher, allowing him to avoid being placed in an outsider's role where he can be discounted along with his findings.

Having identified a set of artifacts which contain the most salient components of the program, the next step is to develop sort-generating questions which will allow the respondents to express their perception of the ways in which artifacts fit together into activities.

Data Collection: Constructing the Sort Generating Questions

The theoretical assumption behind these questions is that individuals perceive specific sets of artifacts as being associated with particular programmed activities. Questions are framed around each major function as a means of eliciting these perceptions. What is at issue here is the fact that no one perceives a given programmed activity as being constituted in quite the same way as anyone else. The object of cognitive mapping is to identify just how convergent these perceptions are for various sets of influentials. It is important, then, that a set of sort-generating questions comprehend the activities basic to the program's organization and function.

The sort-generating questions are phrased in the form of a task for the respondent. That is, the respondent is asked to identify the cards he or she associates with a given activity. Respondents are asked to omit all cards which do not qualify as the key, central artifacts for the stipulated activity. If the sort-generating questions comprehend the primary activities that take place in the program then the results of the cognitive mapping research will yield a reasonably reliable picture of how those in the community perceive the subject program as fitting together.

Central to the framing of the sort-generating questions is an inventorying of the activities that take place within the program. In setting out the activities of a program, a conceptual distinction is made between productive activities and those that are directed toward maintenance of the program as a viable system of action. Program maintenance activities are common to all programs of action. An example of a program maintenance activity is planning. Productive activities are those processes which are intended to implement the goals of the program of action and are particular to it. In both previous health care studies

and in this study of education in Port Angeles, three similar program maintenance activities were posited: planning, financing, and decision making.

Experience in administering the cognitive-mapping instrument indicates that 9 to 10 questions is the upper tolerable limit because of the time needed to make this many sorts and because of the intensity of this kind of data-taking. The problem is therefore to identify the five or six primary activities, out of a much larger universe, which are most central to the realization of program goals. Examples of productive activities from both health care and education were mentioned above. A listing of all nine questions used in the Port Angeles study is found on page 77.

The decision as to which activities shall be built into the sort-generating questions is made through the two step process similar to that outlined above in the discussion of how the artifact list is constructed. Just as with the artifact list construction, the researcher is in possession of sufficient knowledge to construct a tentative set of sort-generating questions as a result of having done the influence analysis. This can then be reviewed with a set of key influentials, to refine and reconstitute it.

Data Collection: Valencing Questions

In addition to the deck of artifacts and the sort-generating questions, a set of valencing questions are used to tap the assessments of community members concerning the activities for which they are sorting. Three valencing questions were used in Port Angeles. The first involves the relative strength that the individual attributes to the activity in comparison with the other activities that are being examined. The second involves the degree of attention and concern that the individual sees as being given to the activity. The third involves a positive or negative assessment that is assigned to an activity, as it is presently constituted.

The valencing questions are given verbally after each sort and the respondent is given a three point scale from which to select a response. It is possible to consider other dimensions for the valencing questions and to present the respondents with other choices, such as a two point or a five point scale. In a study undertaken since the Port Angeles research, a fourth valencing question was added dealing with the presence of efforts to change the nature and direction of the activity as it currently existed in the program sector. This allows the researcher to differentiate high attention activities where change is sought from high attention activities where continuity is sought. The valencing questions used in Port Angeles are found on page 77.

The aim of the valencing questions is to add an evaluative dimension to what is essentially a descriptive response. The card sorting provides a descriptive view of the program sector as seen through the eyes of those in the community. By itself sorting does not convey any information about how the respondents feel about a particular activity in relation to the rest of the program. The valencing questions are designed to provide that information. With the valencing questions, the researcher can get a reading on how those in the community perceive the priorities and the strengths and weaknesses of the program. The valencing questions provide information which greatly enhances that gained from the card sorting porcess.

Data Collection - Administering the Cognitive Mapping Interview

Because the cognitive mapping research is the second phase of a sequential research strategy, most of the respondents will have participated in the influence research. The impact of the influence analysis gives the researcher a credible standing with program influentials and makes access for the researcher much easier. Respondents typically have an interest in the research and some will actively sponsor the activities of the researcher. Given this kind of sympathetic context, the interview begins with the presentation of the deck of artifacts to the respondent.

The origin and intended scope of the artifact deck are outlined and the respondent is asked to go through it to get a feel for what it contains. Initially, the respondent is likely to react to the content of the artifact deck. Usually, this invokes an affirmation of the completeness and relevance of the deck to the program. It is not unheard of for the interviewer to be subjected to a questioning response aimed at discrediting the deck and the research procedure, but these are inevitably linked to concerns about the intent of the researcher rather than to the adequacy of the deck. For the more introspective and the most interested respondents just the examination of the artifact deck will cue a sharing of "insider's" knowledge about the content and organization of the program being examined.

The next step is to outline the sorting process that will be used in the interview and to show the list of sorting questions and valencing questions to the respondent. The actual data-taking can be accomplished in as little as 30 minutes with an overall average of approximately 45 minutes. The total interview can last much longer if the respondent reacts positively and introspectively to the process. The full set of sorts provides the respondent with an opportunity to take a comprehensive look at the program in a context that is outside the demands and constraints of his normal involvement with it. The researcher, because of the influence research and the power of the cognitive mapping research procedure, is in a position to interact with him as a person who

knows and understands the program, but who is not part of it and has no stake in the ways latent as well as overt conflicts might be resolved. Given this fact, the researcher can help the respondent "unpack" some of the meanings the program has to him, to their mutual benefit.

Data Collection: Selection of Respondents

If our purpose is to construct a map of collective cognitions, the matter of whose impressions should be tapped in forging this becomes of critical importance. Who, to put the matter in concrete terms, should be interviewed. Given our aim of working toward the construction of a truly representative map, this is an issue of no small import. It is through a series of interviews with those saliently located individuals that the full blown conceptions of the whole network begins to emerge.

The original target group for the cognitive mapping interview is the top 25 to 30 people from the influence analysis, particularly those centrally located on the molecular charts. This original group will contain a combination of professionals and non-professionals. As the interviewing continues, a balance is maintained between these two sets so that comparisons can later be drawn between them. In Port Angeles, the final total was 71 interviews, of which 42 fell into the sub-set professional category and 29 fell into the sub-set non-professional. With a sample of this size, a number of within and between group comparisons can be undertaken, i.e., principals vs. teachers or high influence school vs. high influence non-school. The presentation of the Port Angeles data under the section beginning on page 76 represents the first stages of this analysis.

Nature of Results - Tabulation of Cards Usage by Sort

The raw data from this second wave of interviews is a body of data constituted of sets of cards that were used in each sort by each respondent. The simplest element of this data--that a given respondent used a particular card in a specific sort--can be combined and recombined in many ways.

The analysis of this data begins by counting which cards were used most frequently in each sort for the entire set of respondents. This is accomplished by locating the most often used card for a given sort. The arraying of cards by frequency of use in a sort provides an indication of what artifacts are associated with each activity. The data array for Sort #1 in the Port Angeles data is found on page 85. The most frequently used cards constitute a collective characterization of that activity in terms of the content and salience of its component parts. The comparison of the arrays for the different sorts provides the researcher with insights into how the artifacts fit into the processes that constitute the

structured activities through which the program operates. These arrays demonstrate with dramatic clarity that local leaders put different sets of artifacts together in each activity area.

Another way of analyzing this data is to examine which artifacts are seen as associated with the provision of educational services and which are seen as involved in the maintenance of the program. If the card usage for all nine sorts is totaled, it becomes possible to make some rather broad comparisons in this regard.

Nature of Results - Tabulation of the Valencing Questions

The valencing questions are presented to the respondents in verbal form with all three questions phrased to elicit a response in relation to a three point scale. In the first valencing question in Port Angeles, the respondents were asked to describe an activity as being a strength, a weakness, or as having both strengths and weaknesses. The results of the valencing are aggregated for the whole sample and for both sub-sets that are being analyzed. The score for the activity reflected by each sort is derived by subtracting the percentage of negative responses from the percentage of positive responses. The score for an activity ranked as a strength by 50 percent of the respondents and a weakness by 10 percent would be +40 (50-10=40), while an activity ranked as a strength by 50 percent and a weakness by 40 percent would receive a score of +10 (50-40=10). The activities embodied in the sorts are then ranked from high to low for each valencing question, both for the total sample and for each sub-set. The rank order listing of a programmed activity by the valencing questions allows the researcher to grasp an evaluative dimension of what is essentially descriptive data. By comparing sorts with each other and by looking at differences in the valencing responses from sub-sets, the researcher gets a sense of which activities are under stress in the program.

Nature of Results - Statistical Analysis

The cognitive mapping data has been analyzed using a number of statistical techniques. The primary goal in undertaking this analysis is to go beyond the tabulation of card usage seeking the patterns and commonalities in the responses which are the keys to the complex, interrelated sets of artifacts that constitute the means through which activities are articulated as productive and system maintaining actions. A considerable amount of effort has been invested in exploring ways of grasping the underlying or inner dimensions of program structure.

In undertaking the statistical analysis the question being asked is "Are there more basic, more generic patterns and commonalities which are being tapped by the ways in which respondents sort cards?" If

there are and if statistical analysis can enable the researcher to identify them and share them with the community members, he is then in a position to provide something of unique value to local leaders. It may be that two or three sorting questions group together as a unit; or that a series of cards are seen as representing essentially similar artifacts, or that sets of leaders hold convergent perspectives. To the extent that statistical analysis allows the researcher to identify truly elemental patterns of structure in the data and to share them with those in the community, then it allows both parties to transcend that ineffable boundary between "insider" and "outsider" that poses such an unbreachable barrier to shared understanding.

Three types of statistical analysis have been applied to the Port Angeles cognitive mapping data; a form of cluster analysis, multi-dimensional scaling, and factor analysis. Each will be briefly discussed below for the benefit of those who may not have encountered them before, even though the results from reliance on all of them will not be presented in what follows.

Cluster Analysis

Cluster analysis is a well known though not widely used statistical technique. A specific application of this procedure tailored to our needs has been developed by a colleague, John Bolland of Ohio State University. This technique rests on the idea of the similarity or closeness of the responses to one question with each of the others. The closeness or distance between leaders or artifact cards or sort-generating questions can each be used to spawn independent forms of cluster analysis. Thus, one can derive clusters of leaders, based on their use of cards in the sorts; or he can derive clusters of activities based on the use of cards by leaders, or clusters of artifacts based on their use in sorts. This technique is still in the developmental stage. It appears that it is best suited to the analysis of how influentials group together on the basis of shared perceptions of how the program fits together and functions.

Multi-Dimensional Scaling

A second statistical technique used to analyze the cognitive mapping data is multi-dimensional scaling. As is the case with cluster analysis, this technique focuses on one of the three components of the data and looks for patterns based on the use of the other two in relation to it. While cluster analysis identifies groupings or nodules of responses that are similar to each other, multi-dimensional scaling provides a set of boundaries or dimensionalities that delineate the social spaces into which these groupings fall. It will, for example, locate a boundary

that runs through superintendent, school board, and business community, and another running through parents, teachers, and students. These boundaries, called dimensions, are typically anchored in two poles. In this instance, further analysis suggested that these two dimensions intersected, raising the question of what label to place on the social space they defined. We labeled this the plane of community control of education. The dynamics of multi-dimensional scaling and some preliminary analysis of the cognitive mapping data indicates that it may be best suited for analyzing the artifacts rather than the sorting questions or the respondents.

Factor Analysis

The thrust of factor analysis as a statistical technique is to examine the data to identify its generic components. "What are the basic components (factors) of the educational system?" is the question for which it is best suited. A number of the sort-generating questions triggered similar responses in the way cards were grouped by nearly all of the respondents. These sort-generating questions can be said to be interrelated, suggesting that they express ideas or concepts which reflect more general or basic elements of program structure.

Procedurally, factor analysis is applied to one component of the data in relation to another while holding the third constant. Thus, one can factor analyze activities against artifacts, influentials against activities, etc. Both the nature of factor analysis and our experience with it indicates it is most effective in analyzing activities in terms of the artifacts of which they are constituted. It is this use of the factor analysis which will be the basis for the presentation of the statistical analysis of the data below.

Feedback and Social Learning

Following the completion of the analysis of the cognitive mapping data, the results of this analysis are organized for a systematic presentation to members of the community. As emphasized above, feedback serves as (1) a learning experience for both the community member and the researcher and (2) as a means of obtaining informal validation of the research findings as a way of verifying their relevance. As this process was used in Port Angeles, our objectives were limited to sharing findings with those who might be able to utilize them.

To the respondent, the cognitive mapping data itself may not be unfamiliar, but the somewhat formal, theoretical way in which it is presented after analysis makes it appear strange and even alien. In part, this is because the formal representation is often more complex

and elaborate than that of any individual's mapping. It is also more objective and abstract. Also, it is a somewhat unsettling experience to have someone from outside the community confront one with what may at first seem as if it is superior knowledge to one's own. The standing of the researcher, which has been gained through the completion of the influence analysis phase places him in a most unique position. It is commonly the case that local leaders require some time to come to terms with this unordinary situation.

All of this provides the researcher with an unusual opportunity to learn from those on the scene. It is characteristic of the debriefing encounter that in his attempt to come to terms with the researcher's data the local leader provides some profound in-depth insights that would never become available in any other way. With the expanded understanding of the program he takes from the cognitive mapping data and the feedback process, the researcher can help initiate rather unusual social learning processes in the community.

RESULTS OF THE PORT ANGELES COGNITIVE MAPPING

Having described how the cognitive mapping was done, we should like now to present the results, and to describe the research instrument in more detail.

The Port Angeles Cognitive Mapping Research Instrument

The sort-generating questions and the valencing questions for the Port Angeles education study are found on page 77. Nine sort-generating questions were chosen. Four of them deal with program maintenance activities: (No. 2) planning, (No. 5) finance, (No. 7) decision-making, and (No. 9) monitoring and managing personnel. Of these four sorting questions the first three were used in other cognitive mapping studies. We had had no prior experience with No. 9; analysis of the data suggests that it did not generate uniformly even responses. Respondents appear to have interpreted it in more than one way. The other five sorting questions deal with the production of educational services. These are (No. 1) teaching basic educational skills, (No. 3) teaching vocational skills, (No. 4) developing creativity, interest, and initiative, (No. 6) instilling social skills and self-discipline, and (No. 8) providing education for handicapped and gifted students.

The valencing questions used in Port Angeles sought three types of assessments; strength-weakness, high attention and concern-low attention and concern, and getting better-getting worse.

The listing of cards used in the artifact deck in the Port Angeles study is found on page 79. This deck was built through the same consultive process used to construct the list of sort generating questions. A wide variety of elements of the education system has been included in this list. As the frequency arrays will show, some were much more widely used than others. But in regard to the adequacy of this deck, the more important fact is that by and large it does identify everything most of those interviewed felt they needed to describe the program. Put in more technical terms, the analysis of the data suggests that these cards allowed respondents to make the distinctions they needed to make to represent their own perceptions.

Port Angeles Cognitive Mapping

Sort out the cards from the deck which are the most relevant to each of the following activities as they presently take place in the public schools (K-12) in Port Angeles:

1) The teaching of basic educational skills to students

2) Planning for the future educational needs of the Port Angeles School District

3) The teaching of vocational skills to students

4) Developing creativity, interest, and initiative in students

5) The financing of public education in Port Angeles

6) Instilling social skills and self-discipline in students

7) Decision making for the Port Angeles School District

8) Providing education for handicapped and gifted students

9) Monitoring and regulating the personnel and the curriculum of the school district.

Indicate your impression of each of the above activities in comparison to the other things that occur in the school district in terms of the following questions:

1) Is this activity one of the strong points of the school district, one of the weak points, or an average point?

2) Is this an activity which receives a lot of attention and concern,

not very much attention and concern, or an average amount?

3) Is this an area where things are getting better, where things are getting worse, or where things are staying about the same?

There were 71 cognitive mapping interviews conducted in Port Angeles covering a ninety-day period. Of those, 42 or 60% were with educational professionals and 29 or 40% were with non-professionals. (This distinction was made on the basis of a formal relation or employment with the school district.) A listing of the names and occupations or associations of those interviewed can be found in Appendex A at the end of this manuscript.

The Tabulation of the Card Usages by Sorts

In this section, the card usage in the nine sorts will be reported on. Total usage for all sorts will be examined first; it will be followed by a comparison of the usage in the program maintenance sorts and the productivity sorts. Finally, each of the sorts will be examined individually. In each of these cases, the result for the total sample and for the professionals and the non-professionals will be presented.

Card Usage in All Nine Sorts

The cards used most frequently across all nine sorts appear on page 80 in Table 3-1. All cards used at least 50% of the total number of times they could have been used are listed. Looking at the list for the total sample, one finds it is dominated by cards representing the roles of the professionals who manage the school system. Cards representing the parental constituency and the student constituency are interspersed with these.

Surprisingly enough, both the arrays from the professionals and those from the non-professionals are not strikingly different from each other, the higher use of special levies and students by the professionals groups being the notable exceptions. It is interesting that the most significant difference between the way these two sets of people used the cards appears in the salience of cards within these two sub-sets. The professionals tend to use the parent card and the teacher cards more frequently than the non-professionals, for example. This could indicate more emphasis is being placed on instruction by the professionals and/or more participation is attributed to teachers and parents in policy-making activities by them.

PORT ANGELES COGNITIVE MAPPING

Education and Community Artifact Cards

1) Superintendent of Schools
2) Assistant Superintendent of Schools
3) School District Business Manager & Business Office
4) School District Funded Programs Coordinator
5) School District Curriculum Coordinator
6) School District Reading Team
7) School District Special Education Staff
8) School District Special Services Staff (Music & P.E.)
9) Principals
10) Senior High School Teachers
11) Junior High School Teachers
12) Elementary School Teachers
13) Counselors
14) School Librarians
15) Port Angeles Education Association
16) School Board
17) P.T.A.
18) Levy Committees
19) Students
20) Parents
21) Active Citizens
22) Average Citizens
23) Peninsula College
24) Business Community
25) Newspapers and Radio Stations
26) State Superintendent of Schools
27) State Government
28) Federal Government
29) City and County Government
30) School Libraries
31) Gymnasiums and Athletic Fields
32) Senior High School Buildings
33) Junior High School Buildings
34) Elementary School Buildings
35) Class Rooms
36) Study Hall
37) History and Social Studies Classes (All Grades)
38) Reading and English Classes (All Grades)
39) Math and Science Classes (All Grades)
40) Vocational Classes
41) Elective Classes
42) Physical Education Classes (All Grades)
43) Athletics, Cheerleading, Drill Team
44) Student Government
45) Extracurricular Activities
46) Special Levies

TABLE 3-I

ALL SORTS

Card Usage for All Nine Sorts

(Expressed in percent of possible usage; 50% of possible usage as cut-off point.)

Total Sample N=71

1) 80% Superintendent
2) 77% Principal
3) 73% School Baord
4) 72% Assistant Superintendent
5) 70% Parents
6) 70% Senior High Teachers
7) 69% Active Citizens
8) 67% Curriculum Coordinator/Consultant
9) 66% Junior High Teachers
10) 64% Elementary Teachers
11) 60% Students
12) 56% P.A. Education Association
13) 53% Funded Program Coordinator
14) 52% Special Education Staff
15) 51% State Superintendent of Schools

Professionals N=42

1) 78% Superintendent
2) 77% Principal
3) 77% Senior High Teachers
4) 75% Parents
5) 73% Junior High Teachers
6) 73% Assistant Superintendent
7) 72% School Board
8) 70% Curriculum Coordinator/Consult.
9) 70% Active Citizens
10) 69% Elementary Teachers
11) 68% Students
12) 58% Funded Programs Coordinator
13) 55% P.A. Education Association
14) 54% Special Levies
15) 53% Special Education Staff
16) 51% State Superintendent of Schools
17) 51% Vocational Classes

Non-Professionals N=29

1) 83% Superintendent
2) 78% Principal
3) 76% School Board
4) 71% Assistant Superintendent
5) 68% Active Citizens
6) 65% Parents
7) 62% Senior High Teachers
8) 59% Curriculum Coordinator/ Consultant
9) 58% Elementary Teachers
10) 58% Junior High Teachers
11) 58% P.A. Education Association
12) 53% Special Education Staff
13) 52% Counselors
14) 51% State Superintendent of Schools

TABLE 3-2

CARD USAGE FOR THE FOUR PROGRAM MAINTENANCE SORTS (50% usage cut-off)

Planning, Financing, Decision Making, Regulating and Monitoring

Total Sample N=71

1) 96% Superintendent
2) 93% School Board
3) 89% Assistant Superintendent
4) 84% Active Citizens
5) 80% Principals
6) 79% P.A. Education Association
7) 73% Curriculum Coordinator/Consult.
8) 73% Business Manager
9) 71% Parents
10) 69% State Superintendent of Schools
11) 64% State Government
12) 62% Funded Program Coordinator
13) 61% Business Community
14) 61% Special Levies
15) 57% Senior High Teachers
16) 57% Levy Committees
17) 54% Newspapers and Radio
18) 51% Junior High Teachers
19) 50% Elementary Teachers

Professionals n=42

1) 98% Superintendent
2) 97% School Board
3) 92% Assistant Superintendent
4) 83% Active Citizens
5) 82% Principals
6) 82% P.A. Education Association
7) 80% Parents
8) 77% Curriculum Coordinator/Consult.
9) 74% Business Manager
10) 70% State Superintendent of Schools
11) 70% State Government
12) 70% Funded Program Coordinator
13) 70% Special Levies
14) 66% Senior High Teachers
15) 63% Levy Committees
16) 61% Junior High Teachers
17) 60% Elementary Teachers
18) 59% Business Community
19) 55% Federal Government
20) 52% Students
21) 51% Newspapers and Radio

Non-Professionals n=29

1) 95% Superintendent
2) 90% School Board
3) 86% Active Citizens
4) 85% Assistant Superintendent
5) 77% Principals
6) 77% P.A. Education Assoc.
7) 73% Business Manager
8) 69% State Superintendent of Schools
9) 69% Curriculum Coordinator/ Consultant
10) 64% Business Community
11) 60% Parents
12) 59% Newspapers and Radio
13) 57% State Government
14) 52% P.T.A.
15) 51% Funded Programs Coordinator

TABLE 3-3

CARD USAGE FOR THE FIVE PRODUCTION SORTS (50% usage cut-off)

Basic Skills; Vocational Skills; Creativity, Interest and Initiative; Social Skills and Self-Discipline; Handicapped and Gifted

Total Sample N=71

1) 81% Senior High Teachers
2) 78% Junior High Teachers
3) 75% Principals
4) 75% Elementary Teachers
5) 73% Students
6) 70% Parents
7) 67% Vocational Classes
8) 67% Superintendent
9) 64% Curriculum Coordinator Consult.
10) 63% Special Education Staff
11) 63% Counselors
12) 59% Assistant Superintendent
13) 59% Elective Classes
14) 57% School Board
15) 57% Reading and English Classes
16) 56% Active Citizens
17) 55% Reading Team
18) 52% Math and Science Classes
19) 50% Special Services Staff
20) 50% Extracurricular Activities

Professionals n=42

1) 85% Senior High Teachers
2) 82% Junior High Teachers
3) 80% Students
4) 76% Elementary Teachers
5) 72% Principals
6) 72% Parents
7) 69% Vocational Classes
8) 64% Curriculum Coordinator/Consult
9) 63% Special Education Staff
10) 62% Superintendent
11) 60% Counselors
12) 60% Reading and English Classes
13) 60% Elective Classes
14) 59% Active Citizens
15) 59% Assistant Superintendent
16) 55% Reading Team
17) 54% Math and Science Classes
18) 52% School Board
19) 52% Extracurricular Activities
20) 51% Special Services Staff

Non-Professionals n=29

1) 80% Principals
2) 76% Senior High Teachers
3) 74% Superintendent
4) 73% Junior High Teachers
5) 71% Elementary Teachers
6) 69% Parents
7) 68% Counselors
8) 66% Vocational Classes
9) 65% Students
10) 65¢ School Board
11) 64% Special Education Staff
12) 61% Assistant Superintendent
13) 58% Reading and Eng. classes
14) 55% Elective Classes
15) 55% Reading Team
16) 54% Active Citizens
17) 52% Curriculum Coordinator/ Consultant
18) 51% School Libraries
19) 51% Math and Science Classes

Card Usages for the Program Maintenance and Productivity Sorts

The card usage totals for the program maintenance sorts and for the production sorts are found on pages 81 and 82, Tables 3-2 and 3-3. A comparison of the two tables indicates that the program maintenance sorts are dominated by personnel from the central administration of the school district and by community groups, while the production sorts are dominated by teachers, support staff, and the curriculum. The feedback sessions make it clear that this is one of the distinctions in the way local leaders view the structure of these two dimensions of the program; the one is organized around roles, the other around groups.

An examination of the program maintenance sort totals shows that the professionals see parents and the teachers as being much more involved with the maintenance of the system than do the non-professionals. Similarly, the non-professionals see the superintendent and the School Board as being more active in the instructional activities than do the professionals. Feedback sessions suggest that these differential perceptions are not merely cognitions. The residents of Port Angeles expect those involved with the schools to know their places, to respect the prerogatives of others involved in the program, and to help sustain orderly policy-making processes by doing that.

Card Usage in the Individual Sorts

The card usage totals for each of the individual sorts are found on pages 85 through 93, Tables 3-4 through 3-12. A number of differences between particular sorts and between the results for the two subsets deserve our attention.

In the basic skills sort, Table 3-4, professionals see a lesser role for the principals, the superintendent, and the school board than do the non-professionals; they also perceive students as more central than their counterparts. This pattern of greater emphasis on administrative personnel by the non-professionals in sorts dealing with the dimension of the production of services is repeated in the creativity sort (No. 4) which is reported in Table 3-7, and in the social skills sort (No. 6) found in Table 3-9. The impressions gained during feedback is that the non-professional's perceptions derive more from a concern with responsibility for outcomes while those of the professionals reflect a concern anchored in the processes through which basic skills are imparted.

A different pattern is found in the vocational skills sort (No. 3), Table 3-6, and the education for handicapped and gifted sort (No. 8), Table 3-11. Here, both the non-professionals and the professionals see the administrative personnel as being highly involved with these activities. Again, feedback suggests that these less fully

institutionalized components of the program are seen as presided over by the administrators, their not having attained that stability of form and structure that characterizes more conventional classroom activities. It is as if the potentiality of change invokes the image of the administrator.

A more general conclusion that flows from the inspection of all of these tables is that the professional develops a somewhat more complex cognitive map than the non-professional. This results not merely in differences in degree, but in inherently different perceptions of how the elements of the program fit together. One manifestation of this can be seen by examining the sorts dealing with vocational skills and those dealing with education for handicapped and gifted. Here the importance of the special levy card, which is high for one sub-set and much less so for the other, suggests a very different conception of what really counts in these areas. Professionals use the card more frequently than non-professionals in one sort while the reverse is true in the other (where State funding is more significant). The more highly differentiated cognitions of the professionals, we suggest, could well account for this inversion.

In the program maintenance sorts (Nos. 2, 5, 7 and 9), there appears to be a general pattern such that professionals perceive teachers and parents as being more highly involved than do the non-professionals; likewise, professionals view program maintenance activities as much more complex and diverse than is the case with the non-professionals. In the planning sort, (No. 2), Table 3-5, for example, professionals use a significantly larger number of cards than do the non-professionals. The result is that the conceptions of the professionals appear to be richer and more complex than those of their counterparts. Feedback sessions indicated that it was more than a little important that the professional's list included cards for the special levy and the levy committee, as well as for special staff and curriculum. In the finance sort (No. 5), Table 3-8, the list generated by the professionals shows a higher use of the cards for school board, parent and principal, and teacher. In contrast to the non-professionals list, which focuses primarily on the passing of special levies, the professionals' list reflects a concern with budgeting and priority setting as well.

In the decision-making sort (No. 7), Table 3-10, the greater use of the State government and Federal government cards illustrates a perception of a more complex activity than is perceived by the non-professionals, particularly in its implication of multiple decision-making arenas. In addition to the differences in complexity, the monitoring and regulating sort (No. 9), Table 3-12, shows differences between the two sets as to perceptions of the efficacy of citizen input. The professionals see the parents as being more significant than the active citizens in this activity while the non-professionals see the active citizen role as being more significant.

TABLE 3-5

CARD USAGE FOR QUESTION NO. 2

Planning for Future Educational Needs (50% usage cut-off)

Total Sample N=71

1) 97% Superintendent
2) 94% Assistant Superintendent
3) 94% School Board
4) 90% Curriculum Coordinator/Consult.
5) 88% Active Citizens
6) 87% Principals
7) 78% Senior High Teachers
8) 75% Junior High Teachers
9) 75% Elementary Teachers
10) 74% Parents
11) 73% P.A. Education Association
12) 68% Business Manager
13) 64% Special Levies
14) 63% Special Education Staff
15) 59% Reading Team
16) 58% State Superintendent of Schools
17) 57% Funded Programs Coordinator
18) 57% Students
19) 54% Levy Committees
20) 51% Business Community
21) 51% State Government

Professionals n=42

1) 97% Superintendent
2) 97% Assistant Superintendent
3) 97% School Board
4) 92% Curriculum Coordinator/Consult.
5) 90% Principals
6) 90% Active Citizens
7) 87% Senior High Teachers
8) 87% Elementary Teachers
9) 82% Junior High Teachers
10) 82% Parents
11) 76% Special Levies
12) 75% Students
13) 72% P.A. Education Association
14) 65% Funded Program Coordinator
15) 65% Reading Team
16) 62% Business Manager
17) 62% Special Education Staff
18) 62% Levy Committees
19) 55% Special Services Staff
20) 55% State Superintendent of Schools
21) 55% State Government
22) 55% School Libraries
23) 55% Vocational Classes
24) 52% School Librarians
25) 50% Business Community

Non-Professionals n=29

1) 96% Superintendent
2) 89% Assistant Superintendent
3) 89% School Board
4) 86% Curriculum Coordinator/ Consultant
5) 86% Active Citizens
6) 82% Principals
7) 75% Business Manager
8) 72% P.A. Education Associat'n
9) 65% Senior High Teachers
10) 65% Junior High Teachers
11) 62% Special Education Staff
12) 62% Parents
13) 62% State Superintendent of Schools
14) 58% Elementary Teachers
15) 51% Funded Programs Coordinator
16) 51% Business Community
17) 51% Newspapers and Radio

TABLE 3-4

CARD USAGE FOR QUESTION NO. 1

Teaching Basic Educational Skills (50% usage cut-off)

Total Sample N-71

1) 100% Elementary Teachers
2) 96% Reading and English Classes
3) 93% Math and Science Classes
4) 90% Reading Team
5) 86% Junior High Teachers
6) 86% Students
7) 83% Curriculum Coordinator/Consultant
8) 77% Principals
9) 73% School Libraries
10) 73% Senior High Teachers
11) 67% Superintendent
12) 65% Class Rooms
13) 65% Parents
14) 64% Assistant Superintendent
15) 61% Special Education Staff
16) 61% School Librarians
17) 61% History and Social Studies
18) 55% School Board
19) 51% Special Levies

Professionals n-42

1) 100% Elementary Teachers
2) 95% Reading and English Classes
3) 92% Reading Team
4) 90% Students
5) 90% Math and Science Classes
6) 87% Curriculum Coordinator/Consult.
7) 82% Junior High Teachers
8) 72% Principals
9) 72% School Libraries
10) 70% Senior High Teachers
11) 67% Assistant Superintendent
12) 65% Parents
13) 60% Superintendent
14) 60% Class Rooms
15) 57% Special Education Staff
16) 55% Active Citizens
17) 53% School Levies
18) 52% School Librarians
19) 52% Physical Education Classes
20) 50% School Board
21) 50% History and Social Studies

Non-Professionals n-29

1) 100% Elementary Teachers
2) 96% Reading and English Classes
3) 96% Math and Science Classes
4) 89% Junior High Teachers
5) 86% Reading Team
6) 82% Principals
7) 79% Students
8) 75% Curriculum Coordinator/ Consultant
9) 75% Superintendent
10) 75% Senior High Teachers
11) 75% History and Social Studies
12) 72% School Librarians
13) 72% School Libraries
14) 72% Class Rooms
15) 65% Special Education Staff
16) 65% Parents
17) 62% School Board
18) 58% Assistant Superintendent
19) 51% Counselors
20) 51% Elementary School Buildings

TABLE 3-6

CARD USAGE FOR QUESTION NO. 3

Teaching Vocational Skills
(50% usage cut-off)

Total Sample N=71

1) 96% Vocational Classes
2) 90% Senior High Teachers
3) 84% Superintendent
4) 83% School Board
5) 80% Students
6) 77% Principals
7) 77% Business Community
8) 74% Senior High Buildings
9) 73% Assistant Superintendent
10) 71% Junior High Teachers
11) 71% Counselors
12) 71% Active Citizens
13) 68% Curriculum Coordinator/Consultant
14) 68% Parents
15) 65% State Superintendent of Schools
16) 64% Funded Programs Coordinator
17) 58% Special Levies
18) 54% Federal Government
19) 54% Junior High Buildings
20) 51% Special Education Staff

Professionals n=42

1) 98% Senior High Teachers
2) 94% Vocational Classes
3) 85% Students
4) 82% Superintendent
5) 77% School Board
6) 77% Senior High Buildings
7) 75% Principals
8) 75% Junior High Teachers
9) 72% Counselors
10) 72% Business Community
11) 72% Assistant Superintendent
12) 70% Funded Programs Coordinator
13) 70% Parents
14) 70% Active Citizens
15) 67% Curriculum Coordinator/Consult.
16) 67% Special Levies
17) 62% State Superintendent of Schools
18) 57% Junior High Buildings
19) 52% Class Rooms
20) 50% Special Education Staff
21) 50% Peninsula College
22) 50% Federal Government

Non-Professionals n=29

1) 100% Vocational Classes
2) 89% School Board
3) 86% Superintendent
4) 82% Business Community
5) 79% Principals
6) 75% Senior High Teachers
7) 72% Assistant Superintendent
8) 72% Students
9) 72% Active Citizens
10) 69% Curriculum Coordinator Consultant
11) 69% Counselors
12) 69% State Superintendent Schls.
13) 69% Senior High Buildings
14) 65% Junior High Buildings
15) 65% Parents
16) 58% Federal Government
17) 55% Funded Programs Coordinator
18) 51% Special Education Staff

TABLE 3-7

CARD USAGE FOR QUESTION NO. 4

Developing Creativity, Interest and Initiative
(50% usage cut-off)

Total Sample N-71

1) 94% Extracurricular Activities
2) 93% Elective Classes
3) 90% Senior High Teachers
4) 88% Elementary Teachers
5) 86% Junior High Teachers
6) 81% Students
7) 75% Special Services Staff
8) 75% Principals
9) 75% Vocational Classes
10) 70% Math and Science Classes
11) 68% Reading and English Classes
12) 67% Athletics, Cheerleading, Drill Team
13) 65% School Libraries
14) 64% Student Government
15) 64% Parents
16) 62% Curriculum Coordinator/Consult.
17) 61% Counselors
18) 61% Physical Education Classes
19) 58% Active Citizens
20) 58% Superintendent
21) 58% Special Education Staff
22) 56% School Librarians
23) 51% Gymnasiums and Athletic Fields

Professionals n=42

1) 97% Extracurricular Activities
2) 92% Senior High Teachers
3) 92% Junior High Teachers
4) 92% Elementary Teachers
5) 90% Elective Classes
6) 87% Students
7) 82% Vocational Classes
8) 75% Special Services Staff
9) 72% Athletics, Cheerleading, Drill Team
10) 70% Principals
11) 70% Reading and English Classes
12) 70% Math and Science Classes
13) 67% Active Citizens
14) 67% School Libraries
15) 67% Physical Education Classes
16) 65% Parents
17) 62% Student Government
18) 57% Curriculum Coordinator/Consult.
19) 57% Special Education Staff
20) 57% Counselors
21) 57% School Librarians
22) 52% Gymnasiums and Athletic Fields
23) 52% History and Social Studies
24) 50% Superintendent

Non-Professionals n=29

1) 96% Elective Classes
2) 89% Extracurricular Activities
3) 86% Elementary Teachers
4) 82% Principals
5) 82% Senior High Teachers
6) 75% Special Services Staff
7) 75% Junior High Teachers
8) 72% Students
9) 69% Curriculum Coordinator/ Consultant
10) 69% Math and Science Classes
11) 65% Counselors
12) 65% Reading and English Classes
13) 65% Vocational Classes
14) 65% Student Government
15) 62% Superintendent
16) 62% Parents
17) 62% School Libraries
18) 58% Athletics, Cheerleading, Drill Team
19) 55% Special Education Staff
20) 55% School Librarian
21) 51% Assistant Superintendent
22) 51% Physical Education Classes

TABLE 3-8

CARD USAGE FOR QUESTION NO. 5

Financing Public Education in Port Angeles
(50% usage cut-off)

Total Sample N=71

1) 96% Superintendent
2) 96% Levy Committees
3) 94% Active Citizens
4) 91% School Board
5) 91% Special Levies
6) 86% Business Community
7) 84% Parents
8) 84% State Government
9) 83% Newspapers and Radio
10) 81% Assistant Superintendent
11) 81% Business Manager
12) 78% P.A. Education Association
13) 78% State Superintendent of Schools
14) 77% Federal Government
15) 70% Average Citizens
16) 68% Funded Program Coordinator
17) 65% Principals
18) 58% P.T.A.

Professionsals n=42

1) 100% School Board
2) 97% Superintendent
3) 97% Levy Committees
4) 94% Special Levies
5) 92% Active Citizens
6) 90% Parents
7) 87% Business Community
8) 85% Assistant Superintendent
9) 85% Business Manager
10) 85% Newspapers and Radio
11) 85% State Government
12) 82% P.A. Education Association
13) 82% State Supt. of Schools
14) 82% Federal Government
15) 72% Funded Program Coordinator
16) 72% Principals
17) 72% Average Citizens
18) 52% Curriculum Coordinator/Consit.
19) 50% Senior High Teachers
20) 50% Elementary Teachers
21) 50% P.T.A.

Non-Professionals N=29

1) 96% Active Citizens
2) 93% Superintendent
3) 93% Levy Committees
4) 88% Special Levies
5) 82% Business Community
6) 82% State Government
7) 79% School Board
8) 79% Newspapers and Radio
9) 75% Parents
10) 75% Assistant Superintendent
11) 75% Business Manager
12) 72% P.A. Education Association
13) 82% State Supt. of Schools
14) 69% P.T.A.
15) 69% Federal Government
16) 65% Average Citizens
17) 63% Funded Programs Coordinator
18) 55% Principals

TABLE 3-9

CARD USAGE FOR QUESTION NO. 6

Instilling Social Skills and Self-Discipline
(50% usage cut-off)

Total Sample N=71

1) 97% Extracurricular Activities
2) 91% Elementary Teachers
3) 88% Parents
4) 86% Senior High Teachers
5) 83% Junior High Teachers
6) 83% Students
7) 81% Athletics, Cheerleading, Drill Team
8) 80% Elective Classes
9) 75% Principals
10) 74% Counselors
11) 73% Student Government
12) 70% Active Citizens
13) 67% Physical Education Classes
14) 62% Special Services Staff
15) 58% Vocational Classes
16) 57% Special Education Staff
17) 55% History and Social Studies
18) 54% Reading and English Classes
19) 52% Gymnasiums and Athletic Fields

Professionals N=42

1) 97% Extracurricular Activities
2) 92% Parents
3) 90% Senior High Teachers
4) 90% Elementary Teachers
5) 87% Students
6) 85% Junior High Teachers
7) 82% Elective Classes
8) 82% Athletics, Cheerleading, Drill Team
9) 72% Student Government
10) 70% Principals
11) 70% Counselors
12) 67% Physical Education Classes
13) 62% History and Social Studies
14) 62% Vocational Classes
15) 60% Special Education Staff
16) 57% Special Services Staff
17) 55% Reading and English Classes
18) 55% Gymnasiums and Athletic Fields

Non-Professionals N=29

1) 96% Extracurricular Activities
2) 93% Elementary Teachers
3) 82% Parents
4) 82% Principals
5) 79% Senior High Teachers
6) 79% Junior High Teachers
7) 79% Counselors
8) 79% Athletics, Cheerleading, Drill Team
9) 75% Students
10) 72% Student Government
11) 72% Elective Classes
12) 69% Special Services Staff
13) 65% Physical Education Classes
14) 58% Superintendent
15) 51% Special Education Staff
16) 51% Reading and English Classes
17) 51% Vocational Classes

TABLE 3-10

CARD USAGE FOR QUESTION NO. 7

Decision Making for the Port Angeles School District
(50% usage cut-off)

Total Sample N=71

1) 96% Superintendent
2) 96% School Board
3) 92% Assistant Superintendent
4) 88% P.A. Education Association
5) 84% Principals
6) 84% Active Citizens
7) 84% Business Manager
8) 78% State Superintendent of Schools
9) 75% Curriculum Coordinator/Consultant
10) 74% State Government
11) 67% Parents
12) 65% Business Community
13) 58% Funded Programs Coordinator
14) 57% Special Levies
15) 52% Senior High Teachers
16) 52% Newspapers and Radio
17) 51% Levy Committees
18) 51% Federal Government

Professionals n=42

1) 97% Superintendent
2) 97% School Board
3) 92% Assistant Superintendent
4) 92% P.A. Education Association
5) 85% Business Manager
6) 85% Principals
7) 85% Active Citizens
8) 82% State Supt. of Schools
9) 82% State Government
10) 80% Parents
11) 77% Curriculum Coordinator/Cnslt.
12) 71% Special Levies
13) 65% Federal Government
14) 65% Funded Programs Coordinator
15) 60% Senior High Teachers
16) 60% Business Community
17) 57% Junior High Teachers
18) 57% Levy Committees
19) 52% Newspapers and Radio

Non-Professionals n=29

1) 93% Superintendent
2) 93% School Board
3) 89 Assistant Superintendent
4) 82% Principals
5) 82% Active Citizens
6) 82% Business Manager
7) 82% P.A. Education Association
8) 72% Curriculum Coordinator/ Consultant
9) 72% Business Community
10) 72% State Supt. of Schools
11) 62% State Government
12) 51% Newspapers and Radio Stations

TABLE 3-11

CARD USAGE FOR QUESTION NO. 8

Education for Handicapped and Gifted Students
(50% usage cut-off)

Total Sample N=71

1) 91% Special Education Staff
2) 84% Superintendent
3) 83% Reading Team
4) 80% School Board
5) 78% Assistant Superintendent
6) 77% Funded Programs Coordinator
7) 75% Curriculum Coordinator/Consultant
8) 75% Elementary Teachers
9) 73% Principals
10) 70% Senior High Teachers
11) 68% Special Services Staff
12) 67% Parents
13) 67% Counselors
14) 67% State Government
15) 65% Junior High Teachers
16) 65% Active Citizens
17) 65% State Superintendent of Schools
18) 65% Vocational Classes
19) 58% Elective Classes
20) 57% Federal Government
21) 55% Special Levies

Professionals N=42

1) 87% Special Education Staff
2) 85% Superintendent
3) 83% Reading Team
4) 80% Assistant Superintendent
5) 80% Funded Program Coordinator
6) 77% Elementary School Teachers
7) 75% Principals
8) 75% School Board
9) 72% Senior High Teachers
10) 72% Junior High Teachers
11) 72% State Government
12) 70% Curriculum Coordinator/Consit.
13) 70% Special Services Staff
14) 65% Parents
15) 65% State Supt. of Schools
16) 65% Counselors
17) 62% Active Citizens
18) 60% Vocational Classes
19) 57% Federal Government
20) 55% Elective Classes
21) 50% Special Levies

Non-Professionals N=29

1) 96% Special Education Staff
2) 86% School Board
3) 82% Superintendent
4) 82% Curriculum Coordinator/Cnslt.
5) 82% Reading Team
6) 75% Assistant Superintendent
7) 72% Counselors
8) 72% Funded Programs Coordinator
9) 72% Elementary Teachers
10) 72% Vocational Classes
11) 69% Principals
12) 69% Parents
13) 69% Active Citizens
14) 65% Special Services Staff
15) 65% Senior High Teachers
16) 65% State Supt. of Schools
17) 62% Elective Classes
18) 62% Special Levies
19) 58% State Government
20) 55% Junior High Teachers
21) 55% P.A. Education Association
22) 55% Federal Government

TABLE 3-12

CARD USAGE FOR QUESTION NO. 9

Monitoring and Regulating Personnel and Curriculum
(50% usage cut-off)

1) 97% Superintendent
2) 93% School Board
3) 88% Assistant Superintendent
4) 83% Principals
5) 78% Curriculum Coordinator/Consultant
6) 78% P.A. Education Association
7) 68% Active Citizens
8) 65% Funded Program Coordinator
9) 62% State Superintendent of Schools
10) 59% Business Manager
11) 59% Parents
12) 55% Senior High Teachers

Professionals n=42

1) 97% Superintendent
2) 92% Assistant Superintendent
3) 90% School Board
4) 82% Curriculum Coordinator/Cnslt.
5) 80% Principals
6) 77% Funded Programs Coordinator
7) 77% P.A. Education Association
8) 65% Senior High Teachers
9) 65% Parents
10) 63% Business Manager
11) 62% Active Citizens
12) 60% State Supt. of Schools
13) 57% State Government
14) 55% Junior High Teachers
15) 52% Elementary Teachers
16) 52% Students

Non-Professionals N=29

1) 96% Superintendent
2) 96% School Board
3) 86% Principals
4) 82% Assistant Superintendent
5) 79% P.A. Education Association
6) 75% Active Citizens
7) 73% Curriculum Coordinator/Cnslt.
8) 65% State Supt. of Schools
9) 55% Business Manager
10) 51% Parents
11) 50% Newspapers and Radio Stations

The Valencing of the Sorting Questions

The scores for the valencing of the sorting questions are found on pages 95, 96 and 97, Tables 3-13, 3-14, and 3-15. As was mentioned earlier these scores reflect the proportions of positive to negative responses. The table is based upon ordering sorts according to this index.

Strength-Weakness

This question, Table 3-13, taps the way respondents assess the contribution a given activity makes to the program of action. A number of comments need to be made about this table. Among all of those interviewed, there is general agreement that finance, decision-making and planning are all strengths in this system; creativity and social skills are seen as weaknesses.

When one compares the responses of professionals with those of non-professionals it appears that there are some significant divergencies in the assessments of the two sets of leaders. Education professionals consider the teaching of basic skills to be a strength while their lay counterparts look upon it with much less confidence. The opposite is true with education for handicapped and gifted. The feedback process indicates that these differences probably derived from divergent conceptions as to what the place of these activities is in the total program. Educational professionals appear to view basic skills in a much more rigorous and narrow sense than do non-professionals; they also view lack of programs for the gifted student with concern. Non-professionals are much more concerned with help for the handicapped students.

Level of Concern

In addition to the matter of priorities among local leaders, there is what we have come to think of as the degree of salience a particular concern has in the eyes of local leaders. A matter may be seen as having a high priority, but having not yet attained a high degree of salience among those concerns about which leaders are prepared to take remedial action. Two prefatory comments might be made about these findings. First, there is a considerable amount of agreement among local leaders about the centrality of particular concerns. Finances, for example, are clearly of immediate, pivotal concern, with the ways in which decisions are to be made about these kinds of matters and the kinds of planning that shall be needed to put them in context dominating the findings for the total sample. The second comment to be made about these findngs is that educational professionals take some rather dramatically different views of saliency in comparison with their non-professional counterparts.

TABLE 13-13

VALENCING QUESTIONS

"A" Strength - Weakness
Rank Order of Sum of % Valence Scores

	Total Sample N=71			Professionals N=42			Non-Professionals N=29		
	Mean % Score		Sort Question	Mean % Score		Sort Question	Mean % Score		Sort Question
1.	+43.6	#5	Finance	+42.9	#1	Basic Skills	+48.3	#5	Finance
2.	+35.2	#7	Decision Making	+40.4	#5	Finance	+44.8	#7	Decision Making
3.	+32.4	#2	Planning	+28.6	#7	Decision Making	+44.8	#2	Planning
4.	+26.7	#1	Basic Skills	+23.3	#2	Planning	+34.5	#8	Handicapped & Gifted
5.	+19.7	#3	Vocational Skills	+19.0	#3	Vocational Skills	+20.8	#3	Vocational Skills
6.	+16.9	#8	Handicapped & Gifted	+ 9.5	#9	Regulating & Monitoring	+ 3.5	#9	Regulating & Monitoring
7.	+ 7.0	#9	Regulating & Monitoring	+ 4.9	#8	Handicapped & Gifted	+ 3.4	#1	Basic Skills
8.	-19.6	#4	Creativity, Interest & Initiative	-23.7	#4	Creativity, Interest & Initiative	-13.8	#4	Creativity, Interest & Initiative
9.	-22.6	#6	Social Skills & Self-Discipline	-26.2	#6	Social Skills & Self-Discipline	-17.2	#6	Social Skills & Self-Discipline
	mean % score for all 9 sorts: +15.48			mean % score for all 9 sorts: +13.24			mean % score for all 9 sorts: +18.78		

TABLE 13-14

VALENCING QUESTIONS

"B" High-Low Attention & Concern
Rank Order of Sum of % Valence Scores

	Total Sample N=71			Professionals N=42			Non-Professionals N=29		
	Mean % Score	Sort Question		Mean % Score	Sort Question		Mean % Score	Sort Question	
1.	+88.7	#5	Finance	+92.9	#5	Finance	+82.8	#5	Finance
2.	+69.1	#1	Basic Skills	+71.4	#1	Basic Skills	+75.8	#2	Planning
3.	+67.6	#2	Planning	+66.6	#3	Vocational Skills	+58.6	#1	Basic Skills
4.	+60.6	#3	Vocational Skills	+61.9	#2	Planning	+51.7	#3	Vocational Skills
5.	+53.6	#7	Decision Making	+57.1	#7	Decision Making	+48.3	#7	Decision Making
6.	+42.3	#8	Handicapped & Gifted	+38.0	#8	Handicapped & Gifted	+48.3	#8	Handicapped & Gifted
7.	+33.8	#9	Regulating & Monitoring	+35.6	#9	Regulating & Monitoring	+31.1	#9	Regulating & Monitoring
8.	- 4.2	#4	Creativity, Interest, & Initiative	0	#4	Creativity, Interest, & Initiative	-10.3	#6	Social Skills & Self-Discipline
9.	- 4.3	#6	Social Skills & Self-Discipline	0	#6	Social Skills & Self-Discipline	-10.4	#4	Creativity, Interest, & Initiative
	mean % score for all 9 sorts: +45.2			mean % score for all 9 sorts: +47.06			mean % score for all 9 sorts: +41.77		

TABLE 13-15

VALENCING QUESTIONS

"C" Getting Better - Worse
Rank Order of Sum of % Valence Scores

	Total Sample N=71			Professionals N=42			Non-Professionals N=29		
	Mean % Score	Sort Question		Mean % Score	Sort Question		Mean % Score	Sort Question	
1.	+80.3	#2	Planning	+73.7	#2	Planning	+89.7	#2	Planning
2.	+66.2	#1	Basic Skills	+69.0	#1	Basic Skills	+69.0	#7	Decision Making
3.	+63.4	#7	Decision Making	+59.4	#7	Decision Making	+69.0	#8	Handicapped & Gifted
4.	+61.9	#8	Handicapped & Gifted	+57.1	#8	Handicapped & Gifted	+62.0	#1	Basic Skills
5.	+56.4	#9	Regulating & Monitoring	+57,1	#9	Regulating & Monitoring	+55.2	#9	Regulating & Monitoring
6.	+49.2	#3	Vocational Skills	+54.8	#3	Vocational Skills	+44.8	#5	Finance
7.	+43.6	#5	Finance	+38.1	#4	Creativity, Interest, & Initiative	+41.6	#3	Vocational Skills
8.	+36.7	#4	Creativity, Interest, & Initiative	+28.5	#5	Finance	+34.5	#4	Creativity, Interest & Initiative
9.	+15.5	#6	Social Skills & Self-Discipline				+27.6	#6	Social Skills & Self-Discipline
	mean % scores for all 9 sorts: +52.58			mean % scores for all 9 sorts: +49.2			mean % scores for all 9 sorts: +54.82		

Future Prospects

As with the attention and concern question, this question shows a high degree of agreement between the school and the non-school groups as to the activities in which the most progress is being made. As with the other two questions, the creativity sort and the social skill sort both rank at the bottom of the results, while planning and decision-making are again highly ranked. The most significant point from the perspective of identifying points of strain in the education system is the ranking of the financing activity on this question. Financing was ranked No. 1 by both the professional and non-professional groups on the attention and concern question, but it is ranked No. 6 by the non-professional group in getting better and only No. 8 by the professional group. This lack of congruence between perceived effort and perceived results is a strong indication a pervasive source of frustration in the system, frustration that may be displaced to other areas if the sense of ineffectiveness becomes too great.

Overall, the valencing questions provide an evaluative dimension to the cognitive mapping data that we feel enhances its meaning substantially. Beyond this, it is our sense, largely from feedback sessions, that these findings equip both the consultant and the community leader to assess alternative lines of action in ways that would otherwise be impossible.

A Factor Analysis of the Sorting Questions

As outlined earlier, factor analysis is a statistical technique which can be used to examine a set of data to determine if it reflects a smaller number of underlying patterns. The classic example is a set of attitude questions designed to tap political conservatism. A factor analysis may show that there are really two elements to people's attitudes; a social conservatism and an economic conservatism. Thus, while some individuals score high on all questions, others may score low on some questions and not on others; yet another individual may have the opposite pattern. The relationship of the questions to the response patterns of the individuals allows the researcher to examine both the nature of an individual's views and the nature of the concept itself.

Cognitive mapping presents a more complex situation because it involves having an individual's having grouped artifact cards according to his interpretation of the sorting questions. It is possible to generate factors which focus on any of those three components--i.e., influentials, artifacts or sorts. However, as noted earlier, factor analysis is more meaningful when it is applied to pairs of dimensions. One of the components is examined in terms of a second while the statistical technique holds the third constant. Thus, one can derive factors based in

data dealing with influentials in terms of sorts, influentials in terms of artifacts, etc. In the Port Angeles research, the only factor analysis results shared with members of the community were sort factors done in terms of the artifacts. The presentation which follows deals solely with that data.

Factor Analysis as a Developmental Tool

The use of factor analysis allows the researcher to go beyond the ostensive representations of the program that are embodied in the raw data generated during the interview. This form of analysis enables the researcher to probe for underlying patterns, the generic conceptions which the community members share as the core of their perspective toward the program.

The sort questions posit a number of activities basic to the operation of the program. Data taken in terms of those activities allows the researcher to replicate the variety of perceptions that are characteristic of the views of strong minded individuals. Like all surveys of opinion, this step may fail to uncover the substrata of common understandings that lie beneath them. Shared understandings about "how things really are" may rarely be articulated publicly; they may not even be spoken of privately, and they are almost never shared with outsiders.

Community leaders seldom have occasion to pause and contemplate just how extensive basic conceptions of the program may be among those who constitute the networks of policy-making influentials. The process of engaging and then coming to terms with the results of the factor analysis can consumate itself in a greater self-awareness and a greater understanding of the program by the community leader. And the insights and understandings that accrue to the consultant as a result of this analysis and the feedback process are such that he or she becomes privy to that non-public consensus which serves as glue for the system. The consultant is very much better able to work with those in the community for having these insights. He also continues to build the credibility necessary to deal effectively with the problem of assisting those in the community to better understand the program and to deal with it through locally generated initiatives.

Factors Deriving from Sort Generated Data

The Port Angeles Cognitive Mapping data was initially analyzed in terms of the sorting questions. This analysis was done in terms of three different groupings of local leaders: first, data from all 71 of the people who were interviewed was factored; second, data from the 42 people who were seen as educational professionals was factored; third,

data from the 29 people who were non-professionals in education was factored. This mode of analysis allows for comparisons of the two sub-groups with each other as well as with the total sample.

It should again be noted that the people who were interviewed were not from a random sample, but were the policy-making influentials identified through the influence analysis. The raw results for the factor analysis of the sorting questions from the total sample are found on Table 3-16, page 101; the results from the educational professionals are found on Table 3-17, page 102; and the results from the non-education professionals are found on Table 3-18, page 103.

Looking at the results for the total network, Table 3-16, one sees that there are two significant factors: The first accounts for 63.2% of the variance in the data and the second accounts for 36.8% of the variance. Table 3-16 also shows how each sort "loads" on each factor. These loadings values can range from a +1.0 to a -1.0. The naming of a factor is accomplished by comparing the sorts on which it loads positively and negatively. Thus, paradoxically, this highly exact procedure consumates itself in this very inexact manner.

Inspection of the so-called raw loadings from the three sets of data presented in Tables 3-16, 3-17 and 3-18 indicates that all three sets of individuals perceive a major factor involving planning, finance, decision making and personnel administration as being pivotal. Both the data from the total sample and the two sub-groups indicates that everyone anchors his conception in a set of terms that are conventionally associated with the management of a program of action. It is not incidental that these processes are commonly seen as guaranteeing the public's control of a program. This is one of the considerations that led us to give this factor the label community-school policy area.

Data from the whole networks shows a second major factor constituted of the terms social skills, creativity, and basic intellectual skills. The terms are all substantive, in that they identify the content of the program, and they are all clearly related to the internal operation of the program; this has led us to label this the Instructional Area.

In the analysis of the educational professional and the non-professional sets, three factors emerged. Two of them would be called major, and the third a minor factor. Each of the analyses presents a factor similar to community-school policy area, but the second factor, instructional area, breaks itself up into a major and a minor factor. We have labeled the first student-school relationship area, while the second has been labeled instructional program area--linking it to the second factor above.

What is striking here, when one compares these two sub-sets of

TABLE 3-16

PORT ANGELES COGNITIVE MAP

Factor Analysis: All Data

SORTS	FACTOR I COMMUNITY-SCHOOL POLICY AREA	FACTOR II INSTRUCTION STUDENT-SCHOOL POLICY AREA
	LOADINGS	
1) Teaching Basic Education Skills	.28	.65
2) Teaching Vocational Skills	.94	.26
3) Pianning	.68	.14
4) Creativity, Interest & Initiative	-.06	.98
5) Finance	.78	-.42
6) Social Skills and Self-Discipline	-.08	.80
7) Decision Making	.94	-.24
8) Special Education (Handicapped & Gifted)	.69	.42
9) Personnel Administration	.97	.02

* * * * * * * * * * *

		% OF VARIANCE	CUMULATIVE %
FACTOR I:	COMMUNITY-SCHOOL POLICY AREA	63.2	63.2
FACTOR II:	INSTRUCTION/STUDENT-SCHOOL POLICY AREA	36.8	100.0

VARIMAX ROTATED FACTOR MATRIX
AFTER ROTATION WITH KAISER
NORMALIZATION

TABLE 3-17

PORT ANGELES COGNITIVE MAP

Factor Analysis: Professionals Only (N=41)

SORTS	FACTOR I COMMUNITY-SCHOOL POLICY AREA	FACTOR II INSTRUCTION ADMINISTRATION POLICY AREA	FACTOR III STUDENT-SCHOOL POLICY AREA
	LOADINGS		
1) Teaching Basic Education Skills	.02	.74	.37
2) Teaching Vocational Skills	.63	.72	.09
3) Planning	.46	.49	.03
4) Creativity, Interest & Initiative	-.19	.34	.89
5) Finance	.89	.05	-.28
6) Social Skills and Self-Discipline	-.10	.10	.93
7) Decision Making	.97	.18	-.18
8) Special Education (Handicapped & Gifted)	.48	.59	.29
9) Personnel Administration	.82	.49	-.04

* * * * * * * * * *

	% OF VARIANCE	CUMULATIVE %
FACTOR I: COMMUNITY-SCHOOL POLICY AREA	58.9	58.9
FACTOR II: INSTRUCTION/ADMINISTRATION POLICY AREA	35.5	94.4
FACTOR III: STUDENT-SCHOOL POLICY AREA	5.6	100.0

VARIMAX ROTATED FACTOR MATRIX
AFTER ROTATION WITH KAISER
NORMALIZATION

TABLE 3-18

PORT ANGELES COGNITIVE MAP

Factor Analysis: Non-Professionals Only (N=29)

	FACTOR I COMMUNITY-SCHOOL POLICY AREA	FACTOR II INSTRUCTION ADMINISTRATION POLICY AREA	FACTOR III STUDENT-SCHOOL POLICY AREA
SORTS		LOADINGS	
1) Teaching Basic Education Skills	.06	.42	.59
2) Teaching Vocational Skills	.89	.09	.41
3) Planning	.66	-.01	.32
4) Creativity, Interest & Initiative	-.07	.92	.30
5) Finance	.81	-.33	-.26
6) Social Skills and Self-Discipline	-.02	.93	.07
7) Decision Making	.98	-.10	-.08
8) Special Education (Handicapped & Gifted)	.58	.21	.49
9) Personnel Administration	.96	.04	.13

* * * * * * * * *

	% OF VARIANCE	CUMULATIVE %
FACTOR I: COMMUNITY-SCHOOL POLICY AREA	59.3	59.3
FACTOR II: INSTRUCTION/ADMINISTRATION POLICY AREA	34.6	93.9
FACTOR III: STUDENT-SCHOOL POLICY AREA	6.1	100.0

VARIMAX ROTATED FACTOR MATRIX
AFTER ROTATION WITH KAISER
NORMALIZATION

data, is the difference in the weight professionals and non-professionals give to these factors.

As can be seen from Tables 3-17 and 18, and especially from the summary Table 3-19, the educational professionals generated an instructional factor which accounts for 35.5% of the variance in their data and a student-school factor which accounts for 5.6% of the variance. For the non-professionals these relationships are reversed. In the factor analysis of the non-professional data the student-school factor accounts for 34.6% of the variance while the instruction/program factor accounts for 6.1% of the variance. These comparisons indicate an important difference in the point of view from which these two sets of program influentials view the program--the very same program, in fact. We shall leave the discussion of the meaning of this difference for the next section while we continue to explore its empirical character here.

The key to this difference in perceptions goes back to the previous presentation of the tabulations of the individual sorts and the differences noted between the professional educators and non-professionals. The professional set consistently differentiated between areas which were primarily internal to the program and those that were primarily external to the program in terms of the actors involved. The non-professional set, conversely, tended to think of all the policy making actors as if they were on a single stage. The factor analysis data indicates the professionals perceive an externally based policy area in factor number one and an internally based policy area in factor number two. This distinction appears to dominate their perspectives. The residual factor, number three, dealing with the student-school relationship area would seem to indicate their awareness of the contrasting view of those outside education.

It is our belief from the contact we have had with educational influentials in Port Angeles that professionals and non-professionals hold perspectives that are not merely different in the weightings they place on the factors that describe the substantive content of their perspectives, but in their complexity as well. That is, the professionals tend to have perspectives that are more complex in their structure, which are more highly differentiated cognitively, than their non-professional colleagues.

We can illustrate what the findings suggest here by taking the analysis one level further. This is done by constructing a graphic representation of the findings we have been discussing in this chapter. This chart is produced through a two-step process. First, the factor analysis data is examined, the key sorts identified, and names given to the factors. The results of this step, for all three sets of data, are presented in the summary table, Table 3-19. The second step is to determine the artifacts that are the most salient to each factor. This is done by taking those sorts that load most heavily on a factor, determining the most frequently

TABLE 3-19

PORT ANGELES COGNITIVE MAPPING

Summary of Sort-Generated Factors

Total Sample - 2 Factors

1) Community - School Policy Area 63.2%
   A) Planning
   B) Finance
   C) Decision Making
   D) Regulating/Monitoring
2) Instructional Policy 36.8%
   A) Teaching Basic Skills
   B) Creativity, Interest and Initiative
   C) Social Skills and Self-Discipline

Professional Educators - 3 Factors

1) Community - School Policy Area 58.9%
   A) Planning
   B) Finance
   C) Decision Making
   D) Regulating/Monitoring
2) Instructional Program 35.5%
   A) Teaching Basic Skills
   B) Planning
   C) Teaching Vocational Skills
   D) Special Education
3) Student-School Area 5.6%
   A) Creativity, Interest and Initiative
   B) Social Skills and Self-Discipline

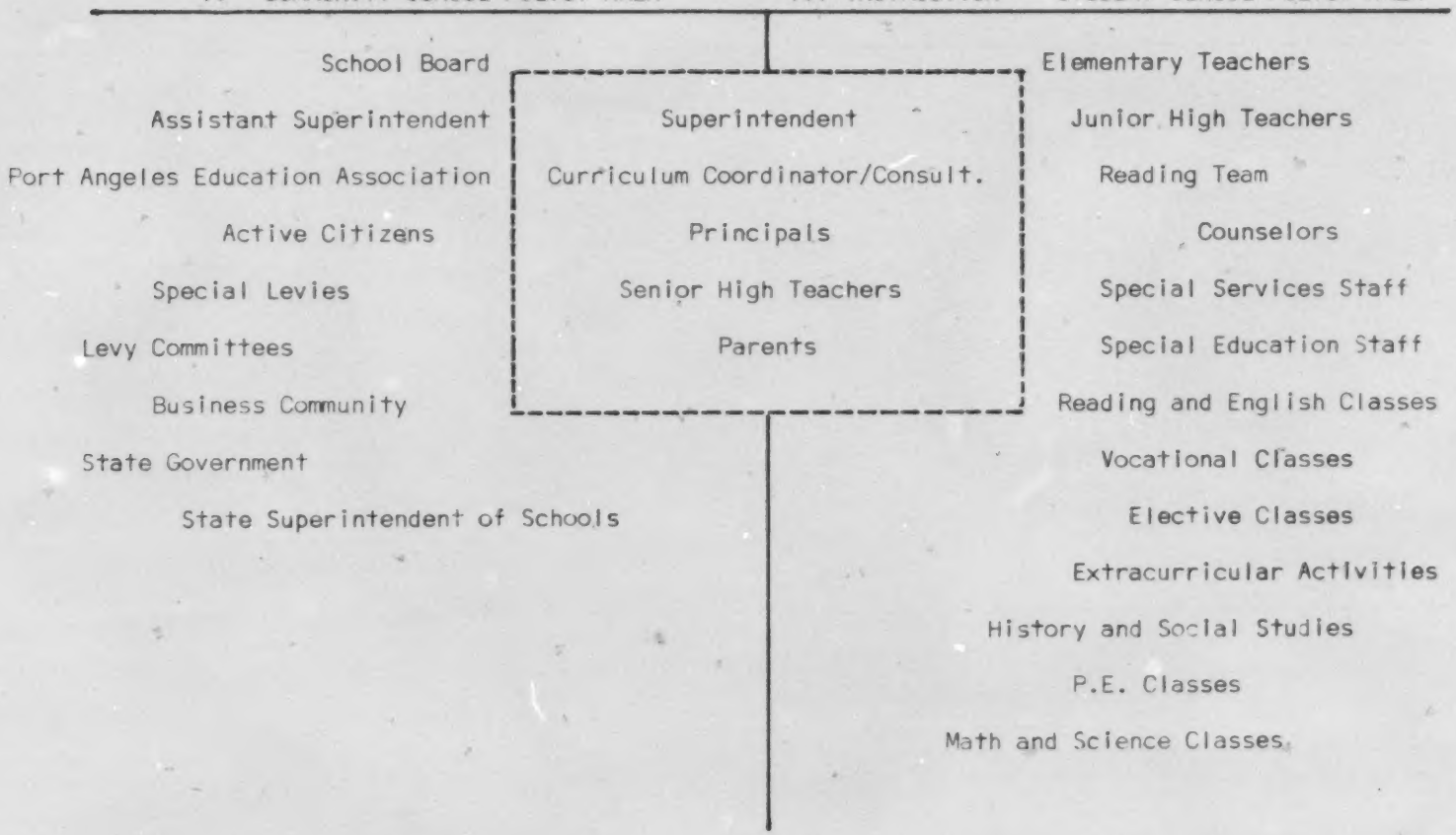
Non-Professionals - 3 Factors

1) Community - School Policy Area 59.3%
   A) Planning
   B) Finance
   C) Decision Making
   D) Regulating/Monitoring
2) Student-School Area 34.6%
   A) Creativity, Interest and Initiative
   B) Social SKills and Self-Discipline
3) Instructional Program 6.1%
   A) Teaching Basic Skills
   B) Planning
   C) Special Education

CHART 3-1

PORT ANGELES COGNITIVE MAPPING

Total Sample Cognitive Map (2 Factors)



used artifacts in each sort, weighting the artifacts in terms of the salience of the sorts in which it appears and identifying those artifacts that are most instrumental to the definition of the factor from these comparisons. The result is a delineation of the factors that is based in the concrete substance of the program--artifacts--as indicated by the sorts.

It is convenient to begin this analysis with the chart from the total set of Port Angeles interviews, Chart 3-1, which is found on page 106. This chart is divided into two areas; one, the larger, on the left side of the box, the other to the right of the box. The size of each factorial area corresponds to the amount of variance in the data that is accounted for by that factor.

Those artifacts that are the most salient in defining the content of each factor are set in the appropriate space. Certain key artifacts, which are shared by the two factors are presented in the box at the center of this chart. These core artifacts appear to constitute a generic substantive core that permeates all sectors of the program.

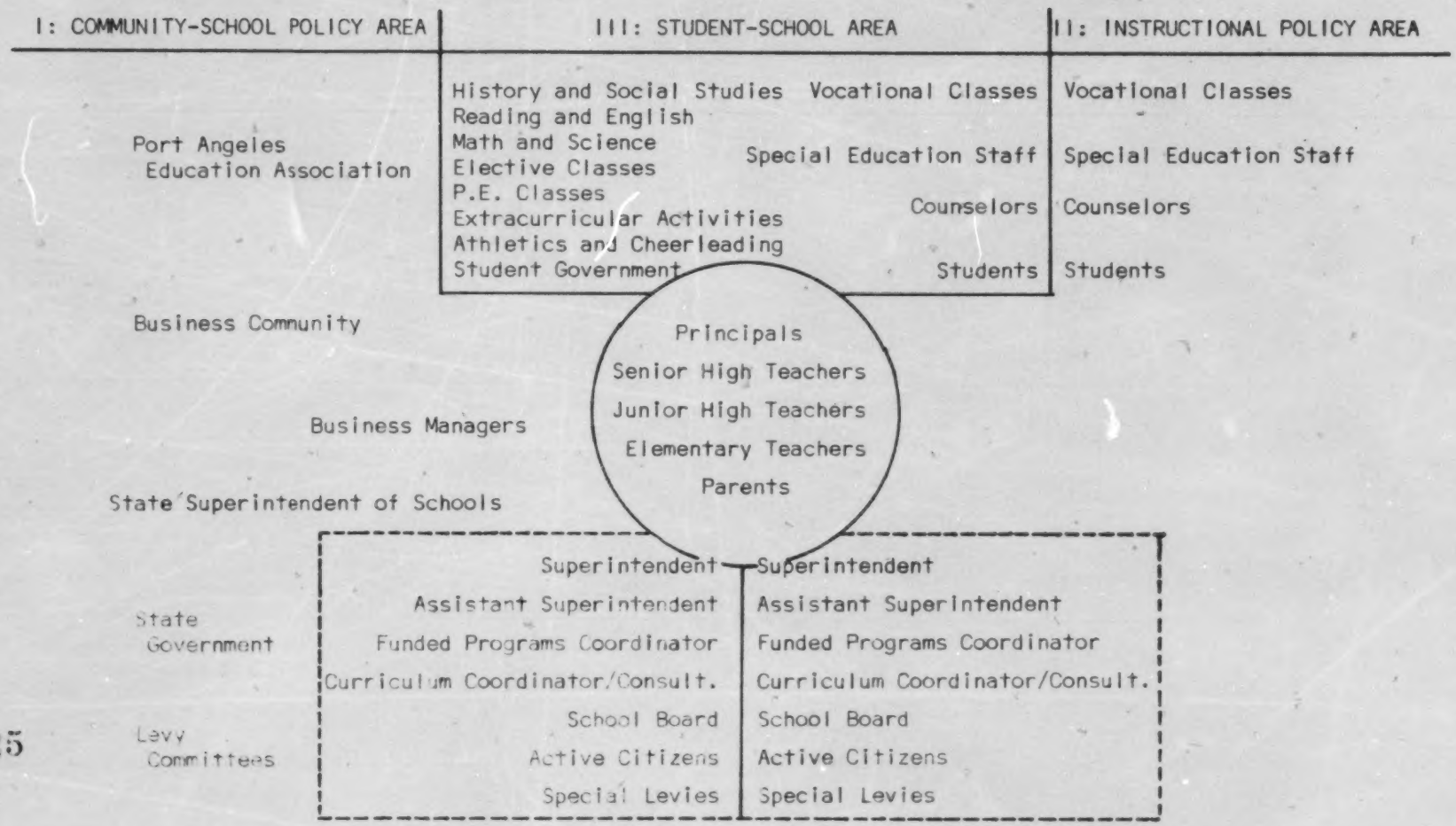
The cognitive map for the educational professionals, Chart 3-2, is found on page 108. It has three factor spaces; again, the amount of space given to a factor reflects the amount of variance it accounts for. And again, there is the core of artifacts--placed in a circle this time --and a set of artifacts common to only two factors. In the community-school policy area there are artifacts such as business community and state government which are peculiar to it alone, artifacts such as superintendent and active citizens, which are shared with one other factor (presented in the space below the circle) and artifacts such as principals, teachers, and parents which are salient to all three factors. By contrast the instructional policy area shares artifacts separately with the other two factors. It also shares a set of core artifacts. The third factor, student-school, has artifacts shared with the instructional factor and artifacts which are part of the core area. There is no sharing, however, between this factor and the community-school factor except through the core artifacts. This lack of integration was supported by the feedback of the data in the community and it will be of greater importance in the discussion of the non-professional chart.

An examination of the cognitive map constructed for the non-professional set, Chart 3-3, page 110, shows the same patterning and the same three factors as in the map for the educational professionals, but the salience and emphasis has shifted, as has the content of the program core. For the non-professional set, the core artifacts are the superintendent, the principals, and the parents. For the educational professionals, they are the principals, the parents, and the three teacher groups; a more formalized view of the program as a whole is indicated for the non-professionals. Of major importance is the relationship of factor

CHART 3-2

PORT ANGELES COGNITIVE MAPPING

Educational Professionals (3 Factors)



one, community-school, to factor two, student-school. These are the two major components of the non-professional's cognitive map, yet they are linked by only the three core artifacts. And there are no shared artifacts linking these two factors, from this perspective.

The same relationship between these two factors can be seen in the educational professionals cognitive map. The overall impression one takes from the cognitive map representing the perspective of the educational professionals is that it is more integrated than that of the non-professionals and, hence, suggests less potential for strain.

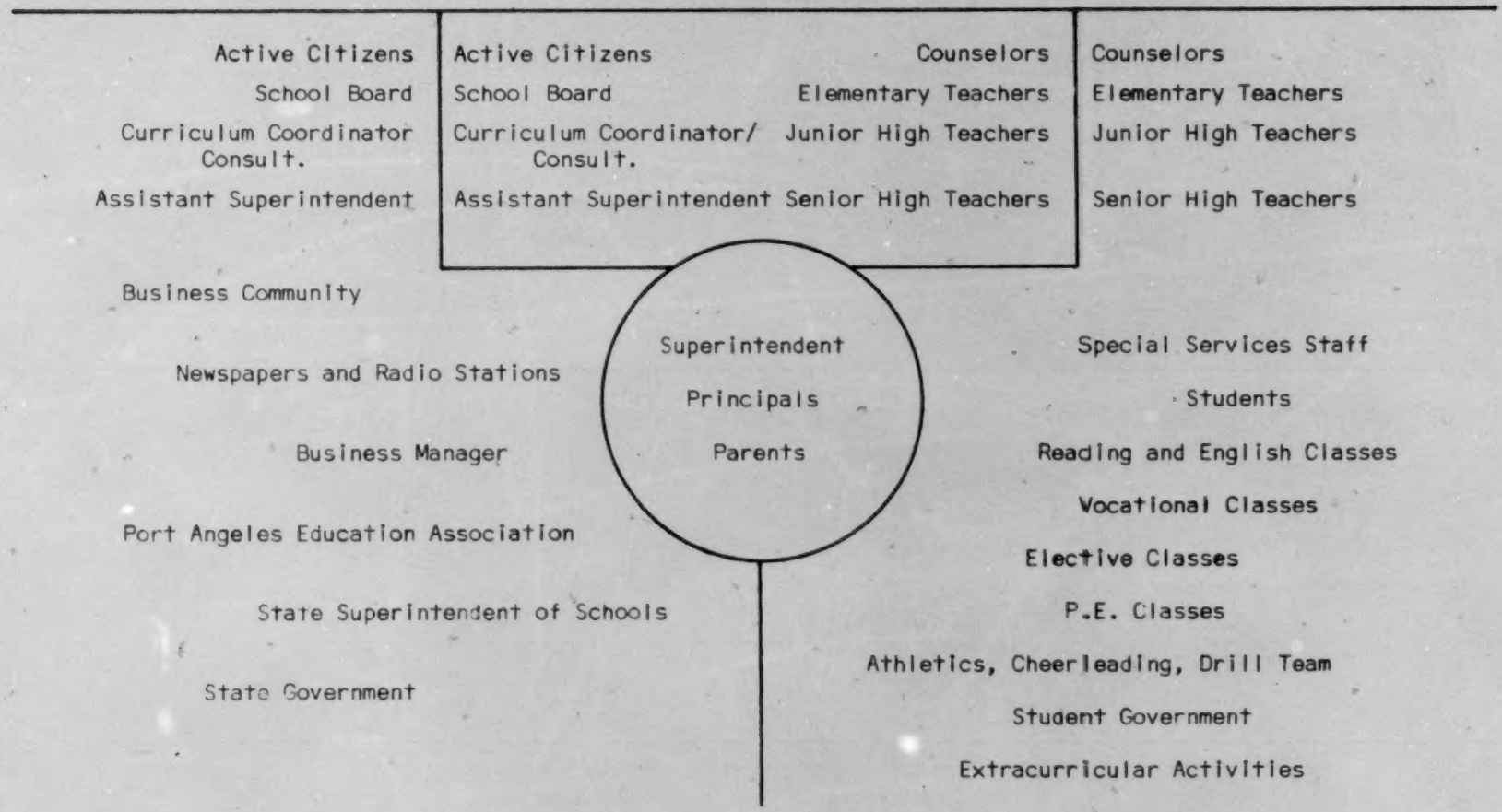
Feedback of the Cognitive Maps

These cognitive maps were shared with community members. The feedback process had the same dual thrust as those mentioned earlier--to facilitate the conceptual development of individual leaders and to provide the consultant with an understanding of the differential perspectives of twin sets of local leaders. Contrasting the cognitive maps from these two sets of local leaders allowed the researcher to comprehend both the general, shared consensus of program perceptions and the perceptions which are particular to those who man the program and those who speak for its constituents. One significant result, both from the point of view of program development and from that of validation, was the ability of the educational professionals to look at both their own and the non-professional maps and relate to them as real and meaningful indications of diverging perspectives. Non-professionals often had the same experience. They were able to engage the results and deal with what they saw as their perceptions, what they believed to be the perceptions of other sets of leaders, the differences between them, and the implications of those differences for the program. Not every person could enter into this; nor everyone to the same degree; but there were strong indications that the cognitive maps served to stimulate new ways of thinking about the basic nature of the educational system in the community and how those in the community perceived of it. To be able to do this and to do it in a setting where the researcher is able to share in it and facilitate it, is--in our view-- a step toward the understanding and development necessary for local leaders to take important initiatives on behalf of their program.

CHART 3-3

PORT ANGELES COGNITIVE MAPPING

Non-Professional Cognitive Map (3 Factors)



APPLICATIONS

Perhaps it would be worth repeating a theme sounded earlier in this discussion, as a preface to this section of Chapter III: The utilization of scientific techniques to map the character of a local education program is, admittedly, a cumbersome way of going about the facilitation of program change. It would not be justified unless both the community and the consultant had arrived at a commitment to undertake something beyond the ordinary. In Port Angeles, the commitment was to experiment with building foundations for program development that reached farther into the sub-soil of conviction and belief than would be possible from relying upon more familiar forms of program assessment.

While it would be misleading to say that we were not concerned with overt or explicit forms of program change, this kind of concern was not central to the thrust of our undertaking. Like most community develOpemnt agencies, this one, at the University of Washington, tends to count itself as having accomplished something useful when it can point to a community where it has been active and identify the specific changes that had taken place, and which, it is assumed, might not have happened if the Division had not made its services available.

In Port Angeles, we were more concerned with the potentiality of change than with facilitating change in itself. It had been agreed that the Division was going to help in building foundations for future changes rather than seeking to evoke some specific change at this time. The rationale for this approach, although mentioned earlier too, might be repeated once more. Social change is a profoundly important kind of local event; it is the sum of program changes over the years that determines, more than anything else, the character of a program at any given point in time. Few changes of a major character can be introduced in a given program at any one time, hence, those that are undertaken must be carefully calibrated to the underlying capabilities and needs. This is not easily accomplished, given the fact that persons in different sectors of the program tend to look at it differently and order their preferences sufficiently differently so that they incline toward quite different forms of change.

Anyone who has ever been involved in launching a change-oriented policy dialogue can testify to a simple but potent proposition:

> The scope and intensity of a projected change in community programs can never exceed the extent of community concensus on basic aims, underlying strategies for realizing these aims, and the level of resources that can legitimately be allocated to implementing them.

The corollary to this proposition is that in these times of social fragmentation it is typically the case that local leaders must work long and earnestly merely to achieve agreement on the most immediate and clearly delineated problems. Pervasive difficulties, even if they are widely recognized, may not be seen as within reach unless they are perceived as having a high potential for becoming problems. Hence, the selection of a particular concern as the object of a problem-solving response comes to become a matter of inordinate importance, in our eyes.

It was in hopes of exploring ways of reaching toward more pertinent and penetrating, though not necessarily more dramatic, forms of program change, then, that we settled upon an attempt to explore the utility of cognitive mapping as a device for coming to a systematic assessment of an educational program.

More concretely, we felt that if we knew, and knew in reliable and scientific ways, more about these beliefs and convictions which are almost never publicly assserted and yet which constitute the foundations upon which a program is ultimately erected, we should be able to do more to facilitate the thinking of those in the community about change. One of the questions that every consultant must ask, but which he can almost never answer with any satisfaction, deals with one of the central foci of the factor analysis of the cognitive mapping data. Do those who man the educational program see it in essentially the same way as those who constitute its constituency? Where are the conceptions of these two interdependent sets of persons convergent, or even congruent: and where are they diverging and to what extent?

It is a truism to say that unless those who man a program and those who constitute its constituency hold more or less shared views as to its basic character and proper content that disruptive and unproductive tensions are inevitable. Yet we all know that diversity is a strength as well as a source of difficulty. Experience has taught most consultants that they can serve those they are working with in a community best by cautioning them not to over reach the consensus that they have on basic program aims while taking full account of contrasting views. But the question that arises and frequently in a quite poignant form--at the point where alternative lines of action to remedy a problematic situation are being considered--is just how to frame a policy decision so as to balance concensus and discensus in a single pronouncement.

It was with these kinds of questions in mind that the Division decided to explore the utility of this particular form of scientific analysis. Our findings leave no question but what this initial cognitive mapping probe offers potentially important kinds of insight to the consultant. Before we attempt to discuss this in more detail it might be worthwhile noting that we had another end in view in undertaking an analysis of the cognitive maps of local leaders.

It it can be said that the consultant, as an outsider, needs to be able to grasp the basic parameters of local program values, then it must be said that those local leaders who are going to have to forge the outlines of a policy decision that could influence the character of the program for some time to come have an even more pressing need for some kinds of understanding. It is often assumed that those who have been involved in a program over the years have no need for additions to their understandings about it. Our experience suggests that it does not follow that familiarity leads to a firm grasp of local difficulty. One is not certain to have a reliable grasp of the configuration of values embedded in a program of action merely because he or she has been active in that program over a period of time.

We have found in working in a number of communities that there is a perniciousness to program strain that often operates so as to jumble program leadership's perspectives just at the time when leaders are seeking to assess the level of convergence in their views. During those periods when the productive activities of the program are being carried off well and with dispatch a sense of confidence pervades the network of policy-making influentials and it is normal for them to feel that there are no pressing problems and hence that "things are going well." Unfortunately, when strain begins to build and pressures begin to play, the question of "what has gone wrong" inevitably presents itself and as this begins to translate itself into the matter of who is at fault, perspectives begin to shift and take new shapes with the result that influentials become so painfully aware of the differences in their viewpoints that they are sometime loath to enter into those open-ended discussions from which a reconcensus could emerge. A situation that is already problematical may well become precarious under these circumstances.

In our view the predicament that program influentials find themselves in as strain builds is the consequence of the perverse dynamics of strain, for there is a great deal of functionality in the diversity of perspectives held by program leaders. It is possible, for example, for a luncheon group constituted of leaders from each of the different sectors of a program to gather and, operating through their unique and sectorially provicial perspectives, to examine a potential line of response from virtually every relevant point of view in a matter of two or three hours. This is no mean accomplishment. But it is the fact that what is a strength in normal times can become a weakness in times of stress and that leads us to experiment with the kinds of analysis that cognitive mapping allows.

Taking this line of argument one step farther we come to the possibility that in facilitating program change it is the contrast between perspectives that are critical during periods when stress is low and the communalities between perspectives that become critical during periods when stress is peaking that should concern the consultant. This

appears to be the case because there are different kinds of decisions being made during one period in comparison with the other. It may be that there are different kinds of decisional functions that become pivotal in one versus the other period as well.

Without attempting to unravel the decisional dynamics of highly stressed versus weakly stressed situations, what concerns us here is the possibility of finding some way to evoke a climate of convergence, that kind of cognitive climate where policy-making influentials are able to initiate discussions that are anchored in broad areas of agreement on basic program values. This, of course, is the challenge we had in mind when we originally began working with Q-sorting techniques. They seemed to offer real prospects for bringing the values up from the bedrock upon which local education was founded onto a level of perception which would allow them to be examined in ways that might raise the possibility of a form of analytic discussion that could otherwise be all but impossible.

Building Concensus

In an open and participative society, concensus cannot be forced; it must be nurtured. Under the best of conditions this is a tenuous process. When program strain begins to escalate it can become problematical. As strain peaks even the most vigorous attempts to build concensus may enable us to do nothing more than stabilize such agreements as exist.

Building the kind of mutual acceptance of basic program values that is manifest in concensus is one of the challenges that community development has long concerned itself with. If its achievements in this regard are less than spectacular it might be noted that in these times of societal unrest and social anomie the building of concensus has become a truly imposing challenge. It is for this reason that we felt justified in undertaking experimentation with such an elaborate technique as cognitive mapping. The turmoil that grips many urban centers (though not Port Angeles to any degree) seems to require a social technology potent enough to provide us with a better chance of counteracting what appear to be ever increasing centripetal tendencies in local programs. Our reasoning was that volitional action is not possible excepting as there exists a fabric of agreements that is embroidered with an elaborate structure of shared attitudes. Without this kind of commonly accepted body of cognitions the actions of individuals responding to programmed activity as well as the collective responses of the various components of the program come unhinged. They lose their resonance and consonance with each other.

If resonance and consonance have the sound of ephemeral kinds of concerns, we need to speak of them in more concrete ways for it is clear that the efficacy of programmed activity is to be found in just such

unspecific states of affairs.

By resonance we have in mind that subtle interaction between the outcomes of one program and requisites of another, adjacent to it, and particularly where the former is expected to sustain and facilitate the latter. In an education program what we are thinking of as resonance would appear as those who are the beneficiaries of a college preparation-oriented curriculum being able to find their way into institutions of higher education from which they take the training they seek as a means of entering into full-time employment in the profession of their choice. Those on the other end of the scale, who are the products of special education activities would find their way from the school system into occupations that they found to be viable as a basis for becoming economically self-sufficient. And that large and amorphous body of individuals in between these limits would make their way, as the denizens of the middle class have been doing for generations in this country, into a wide spectrum of jobs. If the education system had been truly matched to the skills required to keep the community's affairs provided for, almost no one would have to be imported into the local employment market from outside its boundaries.

Though we are talking here of three kinds of outcomes from the operation of the local education program there is nothing neat and tidy about this arrangement other than its logic. For each of the students seeking to find his or her way into a meaningful adulthood by means of the socialization process available through the public schools there is always the uncertainty of the outcomes of the choices that have been made. Only when most of those who progress through the educational program come to settle upon the beginnings of a stable adult role in a community is this basic requisite for the continuation of the community fulfilled. And it is this resonance between the available forms of socialization into adulthood (found in the roles latent within the organizations and agencies that make up local programs) and the variety of roles that must be fulfilled within the community that is the critical test of the efficacy of that program.

The question as to whether a particular educational program resonates to this generic societal function or not is not one that we have always had to be overtly concerned with. So long as the use-life of a social institution was relatively permanent we could take it for granted. Now that we have become only too aware that we must attend to this matter in an explicit way the question as to how we determine if a program is properly calibrated to societal needs becomes a truly pressing one. To restate one of our earlier assertions, this is a question to which we have not yet found satisfactory answers.

Even more relevant to this pivotal concern is what we have labeled the consonance of a program with the constituencies it serves.

Does the education program equip the individual with the capabilities to secure employment and retain it? Does the individual who has matriculated the educational system have a sense of being adequately prepared for the world of the working adult? On balance, and taking the educational experience as a whole, what is the quality of the preparation that it provides?

These are not casual questions even if they are infrequently asked. Obviously they are difficult to answer. Yet there can be no doubting but that the instability that pervades many urban centers can be traced in some important way to a pervasive feeling among a growing proportion of our citzenry that they have somehow been educationally "shortchanged." There is a feeling that much was required of them during their years in school and that ways they cannot really identify the aspirations that they came to hold for themselves as becoming attainable for them. One must hastily add that this may well be the product of some slippage in the calibrating of their aspirations rather than the result of their education having failed them. But the feeling of frustration is undoubtedly there; it is not a transitory thing, it is not dissipating, and it stands to erupt as intense constituent pressure against the legitimacy of the program at some time in the future.

Anyone who has had any contact with educational policy-making recently can testify that there is scarcely a community across the nation where tensions of this sort do not pertain. Yet there is a growing number of these communitites where those who man the program--and hence constitute its productive capacity--and those who are its constituents--and hence the consumers of its services--do not have the capability for full and unconstrained discussion because of the divergencies between their perspectives toward the program. Port Angeles is not one of these unfortunate communities where communication has broken down with the result that violence has been put in its place. On the contrary, Port Angeles is a community where the efforts that are required to surmount the hiatus that divergent perspectives imposes have been made, and have been effective. But with the passage of time the energy required to sustain effective communication in the face of consumer--provider divergencies has been increasing and there are at least some who woryy about the future.

Although the findings from the cognitive mapping process do not provide a complete representation of the intricacies of the divergencies that have left professional and non-professional perspectives somewhat unhinged from each other, they do indicate, and with some conclusiveness, the presence of divergence. As we noted earlier, the existence of diverging perspectives is not in itself a matter for concern. It is natural and functional and expected that those who man a program should have a different sense of it than those who rely upon it. Their contrasting concerns are a source of strength when they examine their conceptions in

light of those held by others in order to seek a spark of insight.

But when strain begins to peak and tensions begin to flow the fact that professionals tend to think of the program in process terms and non-professionals tend to think of it it more formalistic or structural terms means that the possibility for miscommunication is more likely than the possibility for meaningful exchange. The thrust of our efforts has been to use the cognitive mapping analysis to seek ways of identifying what form these diverging perspectives take, how well they are understood by those on opposite side of the professional--non-professional boundary, and what kinds of understanding might be fostered to insure that this situation does not come to pose a barrier to constructive dialogue about problems and priorities.

The experiment, we feel, has been worthwhile. The findings from the research are, in our view, relevant. There is, our experience suggests, promise in this kind of analysis. The challenge, now, is to discover how to bring it to fruition. It is toward this matter that we turn in Chapter IV.

CHAPTER IV

CONCLUSION

Perhaps the most useful thing to do in attempting to assess the outcomes of this explorative study is to restate its objectives:

I. We sought to explore the possibilities of teaming on-going research with community consulting activities--of carrying on a consultive dialogue and a research probe concurrently;

II. We sought to examine the benefits and the difficulties of making the results of the research immediately available to the community consultant;

III. Above all we sought to experiment with the potentialities of sharing the results of fundamental social science research with those who would, under more conventional circumstances, serve passively as its subjects.

There is a great deal that one would like to know about the outcomes of our experiment that we do not understand at this time. What we shall be saying here should be thought of as tentative; some of what we shall say shall be subject to revision as time passes and as we have the opportunity to further assess the consequences of this effort. There is no question but that we learned from what was done.

I. "Double Tracking"

There are some assessments that we can provide in which we have some confidence. It may be meaningful to present what we have to say here in terms of some questions we asked ourselves as the enterprise was being formed.

Is the conduct of research disruptive of consultative activities?

Our answer here can be quite determinative: No. It was pleasing indeed to discover that there was virtually no difficulty in the "double tracking" of consultation and research. One of the questions we had asked ourselves early on was whether the researchers might not take

the time of individuals who were centrally involved in the consultation activity and that this might prejudice its claim on their energies. While there was no question but that this could have been a source of difficulty, our experience indicates that there is no difficulty here that cannot be rather easily overcome.

An overall plan for the year was sketched out before the work was begun. At this time there was careful discussion of the kinds of problems that might emerge, and arrangements were made to circumvent potential overloading. We found that it was essential to go back over these arrangements periodically for it was obvious that overloading could become a real and present threat. But given the fact that the consultants were active in a number of communities and that the researcher was spending only a portion of this time in Port Angeles, it soon became apparent that by phasing the trips of those doing the consulting with the data-taking activities of the researcher it was quite possible to avoid taking an undue amount of the time of any resident of the community.

Of more concern was a less apparent kind of convergence between the research and the consultation. Might the activities of the consultants be undercut somehow by those of the researcher? While it would be surprising to us were this to happen, still there was no way of being certain before the fact that it would not.

During the formulative period of the project, we asked ourselves whether the questions being posed by the researcher might not divert local leaders from the thrust of the consultation. Certainly there was no obvious difficulty here. Our discussions with those in the community suggested that whatever impact there might have been may have been benign or perhaps even modestly constructive. Which is to say that those in the community left us with the feeling that the researcher's probings made them step back from the firing line, as they viewed the consultation, and look at the more abstract dimensions of the total situation. When they did this, they said, they sometimes found they came to a more objective conception of their involvement in the consultation. Though no one felt this made a marked impact upon the course of the consultation, it was reassuring to know that it was facilitative rather than disruptive.

Do the consultants' activities prejudice the research?

Again, we were pleasantly surprised with the compatibility between one track and the other of our enterprise. In a way that the researchers associated with the project had never seen before, those in the community from whom data was sought experienced the research as potentially relevant to local problems rather than something they felt they ought to subject themselves to in behalf of Science. During the course

of developing the research instruments utilized here, we have had the opportunity to take data in a dozen other communities over a seven year period. Nothing in our experience prepared us for the warm and congenial response we received from those in the community when they were contacted about the possibility of scheduling an interview. While this is not a particularly dramatic benefit to realize from "double tracing" it certainly is substantial enough to make the researcher's work much easier and very much more congenial.

Did this almost unknown ease of access, and the very high levels of rapport that were associated with it, mean that the data was of higher quality than might otherwise have been the case? Again, we did not design the work so that there were careful checks built into it which allowed us to assess this in a qualitative manner, but there is no doubt in our minds that the data is of higher quality than it otherwise would have been, had this happy side effect not been available to us. There is no question but that the complete meshing of both activities that was possible given the common sponsorship of the Division, contributed greatly to this pleasing outcome; one way to express its meaning to those of us involved in the research would be to exhort anyone who might have the opportunity, to avail themselves of this kind of arrangement. It is truly advantageous.

Are there ways in which the whole exceeds the sum of its parts?

As one might infer from what has been said above, our answer here is affirmative. Given this experience, our approach to a similar enterprise in the future would surely be to build in a great deal more interdependence between the two activities. Consultants ought to be taken into the data-taking process; there would be benefits to them from being involved in this and there could be significant savings in time and funds from their being a part of this process. Clearly, the researcher stands to benefit in substantial ways from having some role and taking some responsibilities in the consultation process.

All of which amounts to our being able to hold that our first objective, exploring the "double tracking" or research and consultation activities can be said to have been most successful.

II. Consultant Support

Our second objective, that of providing support for the consultative activities of the Division was noticeably less successful. We were very desirous of offering those who are seeking to support local leaders in wrestling with the underlying difficulties of the community with a kind of backup and insight that would allow them to do more for

their clients than was ordinarily the case. Above all, we sought to provide a kind of insight that would enable the consultants to undertake activities with those on the scene who had committed themselves to this exploration of the roots of program change that they could not otherwise have considered.

So with regard to providing consultants with findings and insights that would enable them to provide new and more pertinent forms of support for local leaders, we cannot claim more than a modicum of success. This statement needs at least some qualification, however, for findings that came from the research were useful and suggestive to those who were serving as the Division's consultants in Port Angeles.

The molecular chart of the influence network was more than a little helpful. Relationships that would customarily have been intuitively assumed were not merely explicit; they were understood earlier than would typically have been possible from the normal activities of the community consultant. And what one who was working in the community could see on the basis of the influence chart could easily and authoritatively be shared with others on campus who had never been to Port Angeles. Perhaps what can be said is that these are all advantageous outcomes of the research, giving the consultants an increased sense of confidence in their understandings of the local situation.

But the underlying challenge facing the consultant is one of discovering where difficulties are rooted and where tensions block constructive dialogue and to assist in fashioning ways of enabling local leaders to surmount some of these all too familiar barriers to action. Unfortunately, the influence analysis process provided almost no assistance in this regard. We say unfortunately because we did not fully anticipate this during the period when the project was being planned. It was not so much that we had assumed that the influence phase of the research would be central to the concerns of the consultants as that we failed to realize how peripheral any findings would be that did not impinge directly upon the stresses and tensions that constituted the central concern of those who were involved in program leadership.

From the beginning we had anticipated that the cognitive mapping phase of the research might be more pertinent to what the consultants were engaged in. It had been anticipated that the influence research might not have much pertinence to the consultants but it had been suspected that the findings from the cognitive mapping could be of more than incidental use to them.

This did not come to be the case. While it did not cast a cloud over the whole project, it represents the blunting of a hope that was central to its having been launched in the first instance.

Our reasoning, during the period when the project was being planned, was that it is precisely when it comes to understanding the "lay of the land" in a community that the consultant needs a special kind of assistance. It benefits no one, for example, for the consultant to speak of initiatives that program leadership might take if the initiatives he has in mind could be totally misconceived, given the particulars of the situation in the community at a given moment in time. While the Division's consultants had become quite skillful in avoiding this kind of misstep, they were aware that all too often they had to sit by and watch while problems built, knowing that if they only had a better understanding of the local situation they might be in a position to offer constructive suggestions.

It was our belief that by forming an empirically grounded conception of the content and character of the educational program, we would provide findings not previously available to consultants, and that these would be of real and present use to them. Such was not the case.

This is not to suggest that the findings from the cognitive mapping phase of the research were of no value to the consultants. There is no question but that these findings constituted a unique and original kind of resource. But the mappings of the collective cognitions of local leaders did not have the relevance we had expected. In part it may have been that these data-taking techniques were so powerful and so penetrating that they produced findings that reflected such generic and underlying elements of the program that they failed to take account of the more mundane realities that impinge upon our experience with it.

What suggests itself is that so far as the consultants use of findings from the cognitive mapping data was concerned, there is need for an intermediate level of technology, one much more fully attuned to the day-to-day experiences of those who man a program with those who constitute its constituencies.

III. Sharing Findings With Local Leaders

Some of the most rewarding aspects of this work derived from this third prong of the project, that of attempting to share the results of fundamental social science research with those who would, in more conventional circumstances have served merely as the subjects--and, hence, in a sense the objects--of the researcher's probings.

Having been involved in analyzing influence in more than a dozen communities, we felt we knew what we could expect by way of local response in this regard. We were not disappointed.

Influence nets are the means through which all effective

programs of action mobilize local leadership so as to enable those who are in positions relevant to dealing with particular problems can be identified and brought together to attempt to deal with the challenges change brings. Formal chains of command and explicit hierarchies of authority are seldom pertinent to the formulation of program changes that may spill over jurisdictional lines and call for the involvement of a wide variety of technicians.

Anyone who has been active in a program for a period of time comes to an awareness of the outlines of a network of influentials, some of whom may have no formal authority of any kind. Almost anyone with this kind of involvement in the program will find the charting of these relationships intriguing and informative. Often a local leader will find that the molecular chart enables him or her to look at their own position in the network with an objectivity that is truly rewarding. To have an increased awareness of "where one stands" in this ad hoc, indigenous web of relationships is almost always a reassuring experience.

Our debriefing sessions with local leaders in Port Angeles were mostly of this quality. Many positive and affirmative comments were made about the intricacy of the molecular chart and a number of expressions of regard for its fidelity to the local scene were offered, quite spontaneously. The researcher came away from these encounters with a keen sense of having demonstrated once again that this powerful scientific technique has more relevance to those engaged in program leadership than meets the eye. Since our primary interest in influence charting in this instance was to allow a careful and systematic selection of interviewees for the cognitive mapping data, there was no reason to dally over these responses, gratifying as they were.

During the construction of the deck of cards to be sorted in taking the cognitive mapping data, the rapport generated during the influence data-taking provided a solid base from which to work. There can be no question but that those engaged in leadership in education in Port Angeles were more than happy to have a part in this second phase of the research even though nearly everyone disclaimed any real understanding of its relevance to their affairs. This spirit of cooperativeness continued to manifest itself during the taking of the cognitive mapping data. Many of those interviewed indicated a strong desire to be debriefed once the findings became available.

As the findings became available some of them were shared with those who had been most interested in what they might show. The responses of these individuals, which might have been expected to be the most affirmative we would receive, varied from mild interest through confusion to moderate skepticism. Several sessions during which we shared the early fragments of findings from the data with a number of highly involved individuals indicated that we might very well find ourselves imposing

something that was unwelcome upon people toward whom we had, by this point, become warmly appreciative and we determined not to let the rest of the debriefing go while we "went back to the drawing board", as the saying goes, to discover some way of formulating our data so that it would be more pertinent to those in positions of leadership. As of this date, we are still in the process of developing these new forms of presentation.

During this process, we have come to some preliminary conclusions as to why these findings presented in Chapter III might have been seen as somewhat irrelevant.

For those who did not hold positions in the influence network that brought them in contact with all of the components of the program, the maps we presented appear to embody a point of view that disregards their particularized involvement with one component of the program. For the non-professionals in the influence net, the chart was especially difficult to relate to since it emphasized functions, as opposed to activities, that they were only familiar with as conceptions and ideas. Even those, such as members of the Superintendent's staff, who were thrown in contact with all of the elements of the educational program, found the map we presented to them somewhat obtuse and quite abstract.

We have been forced to conclude that while this body of data is reliable and of unquestioned scientific validity, it is so completely keyed to the functional organization of the program and so removed from the activities in which those involved with the program find themselves engaged that we have, in effect, utilized a data-taking technique that gives a mapping cast through such large contours that one cannot readily link it to specific and concrete benchmarks on the social terrain. "It may be useful to the scientist," one of our informants said, "but it does not come to grips with what I am doing in this program."

Our attempts to reformat the Port Angeles data have led us into the development of another set of procedures for dealing with the content and outlines of the program. We shall soon be testing these to discover whether they provide mappings with more detail and more relevance.

LARGER IMPLICATIONS OF MAPPING COLLECTIVE COGNITIONS

Several times in this discussion, we have made reference to the relationship between individual understandings of the program as a system of social action and the existence of that comfortable concensus among critically placed leaders that is so facilitative of effective policy-making. It is too much to say that within a context of basic agreement

almost any difficulty can be dealt with constructively, while in a context of contrasting and incompatible opinions contentiousness and a kind of conflict that diverts us from coming to grips with the roots of programmatic difficulty is promoted. But if this is an overstatement of the case, it points toward something that could make a great deal of difference in our capacity to deal effectively with the difficulties that have erupted in almost every local educational program.

Again, it might be useful to raise some questions which, while they cannot be answered on the basis of a single project, could offer a way of assessing the potentiality of concerning ourselves with the cognitive maps of local leaders.

Does an overt and explicit concern with the perspectives, the attitudes, the beliefs, and the convictions of those who are seeking to frame policy disrupt the making of policy decisions?

It is our sense of this form of data-taking that it is most accurate to state that it does not seem to have any marked impact--either positive or negative--upon the making of policy. Our experience suggests that the psycho-social domains within which local leaders operate are separated from each other in such a way that they themselves make effective distinctions between research and action.

It may well be that there are other ways in which the research could be carried on that might be either quite beneficial or seriously disruptive. We asked ourselves, for example, what the impact might have been of taking the cognitive mapping data before the activities of the consultants had progressed to a point where those working with them had a sense of what they were about and what they hoped to accomplish as a result of their efforts. It might well be that the research could have been disruptive if what we have called the phasing had been different.

And we asked ourselves whether mapping cognitions might have been disruptive were it not preceded by the influence study. Again, we can do no more than hazard a guess, but it is our feeling that the work of the consultants is more determinative of how leaders experience the cognitive mapping research.

Does an analytic study of perspectives, attitudes, beliefs and convictions facilitate the making of policy decisions in any discernible way?

This query was implicit in what was said about the mechanics of the research earlier in this chapter. Our response, while somewhat vague and tentative, was negative. It is not that there is no evidence to

indicate this research served the cause of policy making, but there is such a paucity of evidence in this direction that we are forced to conclude that such positive impacts as there may be are inconsequential. If one wished to promote more intense and vigorous policy-oriented activities, this would be a poor way to realize this end.

Does the possibility of studying the cognitive context of policy making appear to promise us new knowledge about this aspect of this critical process?

To this question, we can offer a more affirmative response, and on two levels. First, it seems clear to us that while the manner in which we carried on the research in this community does not seem to have had more than a negligible impact upon those on the scene, there is no question in our minds but that we gleaned a good deal of reliable knowledge from what was done. Prejudiced as we may be, it is our conviction that this was a most productive research undertaking.

There has been talk of the pivotal role cognitions play in the operation of a democracy for centuries, but there has been precious little systematic research into the matter. We found, to our satisfaction, significant divergencies among the perspectives of professionals and nonprofessionals. But we also found convergencies and commonalities. What might be the potential for consultants involved in advising local leaders, if we discovered a way to calculate an index of cohesion (or discohesion)? Would it be useful to those making decisions about where to begin to "take hold" of a given problem to know that there was agreement on a particular aspect of this matter, but wild differences of opinion over others? Would it be helpful if we were able to suggest that the evidence indicated an attempt to "push" toward closure on a given issue could be expected to degenerate into contention?

Obviously, there is much promise in this kind of research. But the distinction made above needs to be repeated. These findings, in and of themselves--that there is a commonality of opinion in regard to one aspect of the program and there is divergence of opinion in relation to another--are not immediately relevant to those on the firing line. While our ability to make this distinction appears to have a considerable potential, this is unlikely to be realized merely by expanding the analysis of the data discussed in Chapter Three. More findings, more comprehensive findings, or more kinds of findings do not seem, in and of themselves, to offer much promise to those who must make decisions. On this point the expectations we brought to the project turn out to be overly optimistic.

What kinds of research on mapping cognitions would seem to offer the most immediate promise of new and useful knowledge?

To pose this question is to imply that our formulation of the project in the first instance was overly simple. We need to enter this assertion into the record for it enables us to identify what we feel to be the real value of this work. There is much that we have learned about where to focus future effort from this undertaking. We should like to iterate several of these, first noting that we do not feel that we have any reliable sense of priorities:

1. There is no question in our minds but that there is a time to launch information activities and another time to begin making policy. The decision as to which of these lines of response to follow is a crucial one.

   We feel that future research could provide indices reflecting the level of information current among the members of a network of policy makers that could be useful to those confronted with the need to make this kind of choice.

2. To even consider one kind of programmatic concern rather than another is to raise the possibility of overlooking the urgent desires of one constituency in favor of another.

   Policy makers must forever search for lines of response that are (a) pertinent and (b) feasible. This kind of research could provide some useful kinds of indicators of which of the multiplicity of concerns local policy makers are espousing best fulfills these criteria.

3. To launch a policy making dialogue that is destined to degenerate into pointless contention instead of resulting in the resolution of difficulty is one of the highest callings to which leadership can respond. There is good reason to believe that research of this kind could, after being sufficiently elaborated, provide indicators that would enable policy makers to deal much more confidently with this kind of consideration.

Our enthusiasm for this kind of research is such that we could extend a list such as this to considerable length. This is not the place to undertake to inventory the knowledge-generative potentialities of cognitive mapping research. What does need to be said, we feel, is that while this project failed to provide the immediate kinds of benefits we envisioned for it, it has demonstrated the potential of this line of

analysis as a basis for strengthening the foundations from which community consultants can mount their ameliorative activities.

APPENDIX A

SAMPLE JUDGING FORM

EDUCATION

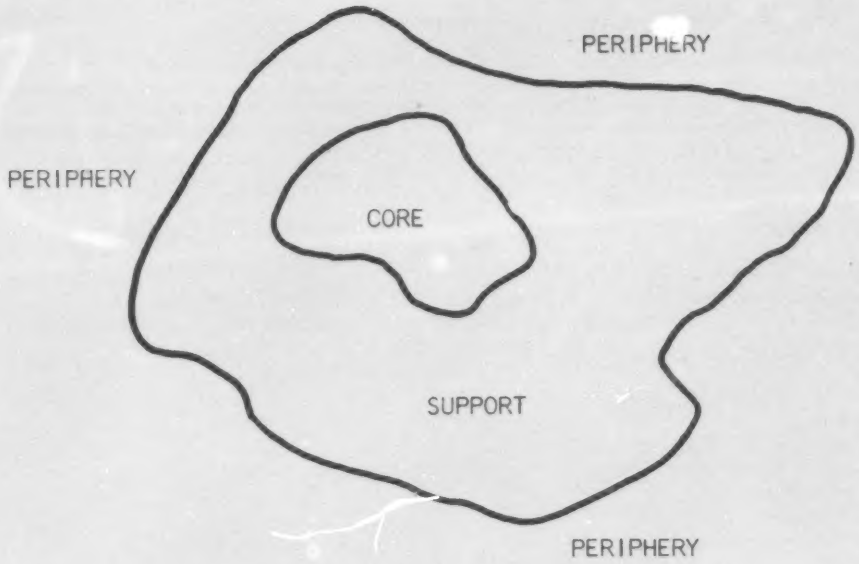
PORT ANGELES INFLUENTIALS INVENTORY

The names on the following list represent individuals who are involved in some aspect of education in Port Angeles. They were obtained from three sources: stories in the Port Angeles daily newspaper, lists of office holders (such as the members of the school board), and interviews with people associated with education in the community.

What you are asked to do is straightforward. Beside each name are two columns of questions. In the first set of columns you are asked to indicate how well you know the individual. In the second set of columns you are asked to describe the nature of the individual's involvement in education.

If you do not find someone whose name you think should be on a list of leaders in education in Port Angeles, please add the name to the list.

	Check One:			Check One:		
				IMPORTANCE		
	I have not heard of him	I have heard of him but don't know him	I know him personally	A Core	B Support	C Periphery
Abuan, Encarnacion						
Adkins, Victoria R.						
Adolphsen, Marilyn						
Allman, Robert						
Allman, Mrs. Robert						
Anderson, Duane						
Anderson, Jan						
Anderson, Richard L.						
Andre, Barbara						
Andrus, Joycelon						
Anstett, Betty						
Arnold, Barbara E.						
Ashley, Anne						
Asseln, Barbara						



Core - People who are highly involved in determining the nature and direction of education in the community.

Support - People who are involved in the education system in the community, usually in terms of its day-to-day operation, but who do not take initiatives to shape the nature and direction of education in the community.

Periphery - People who are only indirectly related to education and involve themselves in it only occasionally.

Example

Teachers do not fall into a particular category simply because they are teachers; rather, the level of a particular teacher's involvement in shaping the nature and direction of education in the community will determine into which category he or she falls.

SAMPLE I-C QUESTIONNAIRE

Port Angeles Education Survey
Fall 1974

Respondent _____

Date _____

Interviewer _____

Part I. Background Information

Primary Position _____

Other Positions, Memberships, etc. _____

_____

Length of Time Primary Position Held _____

Length of Time in Port Angeles _____

Age _____ Sex _____

Part II. Inventory of Individuals Related to Education

From the list of names on the following two pages:

A. Estimate the frequency of contact in an "average month."

B. Please rank the ten most important individuals in the area of education. Please rank yourself if appropriate.

A. Estimate the frequency of contact in an "average month."

B. Please rank the ten most important individuals in the area of education.

	A	B			A	B	
1.	___	___	Robert Allman, M.D.	37.	___	___	George Ellis
2.	___	___	Mrs. Robert Allman	38.	___	___	Bill Elwood
3.	___	___	Duane Anderson	39.	___	___	Alan Enderle
4.	___	___	Barbara Andre	40.	___	___	Lavonne Ensor
5.	___	___	C. Vernon Basom	41.	___	___	Donald F. Fairbairn
6.	___	___	Leonard Bell	42.	___	___	Art Feiro
7.	___	___	Hattie Berglund	43.	___	___	William Gellor
8.	___	___	Erma Berkley	44.	___	___	Gary Gleason
9.	___	___	Gene Biddinger	45.	___	___	Frank Gore
10.	___	___	Nina L. Binkie	46.	___	___	Jack Graham
11.	___	___	Henry Boni	47.	___	___	Darlene V. Granlund
12.	___	___	Geneva Borho	48.	___	___	Peter B. Granlund
13.	___	___	Bob Boyd	49.	___	___	George E. (Ed) Grier
14.	___	___	Leonard Brouillard	50.	___	___	Nancy Grier
15.	___	___	Henry A. Brown	51.	___	___	Sam Haguewood
16.	___	___	Mary Brown	52.	___	___	A. H. (Gus) Haley
17.	___	___	Harriette Buchmann	53.	___	___	Jan Hare
18.	___	___	George Buck	54.	___	___	Charlotte Hartman
19.	___	___	Charles Byrd	55.	___	___	Sandi Hartmann
20.	___	___	Karen Byrd	56.	___	___	Mary Hendricks
21.	___	___	D. J. Caulkins	57.	___	___	Charles Herring
22.	___	___	Bruce Clampett	58.	___	___	Russell Hesselman
23.	___	___	Bob Clawson	59.	___	___	Judy Hoffman
24.	___	___	Rosemary Cockrill	60.	___	___	Eric Hoglund
25.	___	___	Constance Collins	61.	___	___	Martha Hollingsworth
26.	___	___	Paul H. Conner	62.	___	___	Curtis G. Horne
27.	___	___	Estill Cornett	63.	___	___	Tom Hostetler
28.	___	___	Reba Cornett	64.	___	___	Kenneth Howerton
29.	___	___	Margaret Crawford	65.	___	___	Milton Hunt
30.	___	___	Kay L. Dill	66.	___	___	Reed Jarvis
31.	___	___	John C. Drain	67.	___	___	Elspeth Kalahar
32.	___	___	Frank Ducceschi	68.	___	___	Gordon Kalahar
33.	___	___	Dennis A. Duncan	69.	___	___	John Karas
34.	___	___	Dorothy Duncan	70.	___	___	Darlene L. Kays
35.	___	___	Merle Eells	71.	___	___	John B. Kays
36.	___	___	Charmian Elliot	72.	___	___	Stephen Kennedy
				73.	___	___	Sanford Keys

A. Estimate the frequency of contact in an "average month."

B. Please rank the ten most important individuals in the area of education.

	A	B			A	B	
74.	___	___	Virgil H. King	110.	___	___	Albert A. Roblan
75.	___	___	Beverly Kinney	111.	___	___	Ron Rogstad
76.	___	___	Lyle B. Kinney	112.	___	___	Lorraine Ross
77.	___	___	James Kirks	113.	___	___	Robert K. Ross
78.	___	___	Robert Klock	114.	___	___	Carol M. Royce
79.	___	___	Larry Lack	115.	___	___	Fred Royce
80.	___	___	Paul Lamoureux, Jr.	116.	___	___	Mac Ruddell
81.	___	___	Don Lang	117.	___	___	Gordon Sandison
82.	___	___	Richard (Bunk) Lang	118.	___	___	Norma Sandison
83.	___	___	Eugene L. Larsen	119.	___	___	Ken Sandwick
84.	___	___	Everett B. Lindaas	120.	___	___	Marge Sandwick
85.	___	___	Lyle Lindelien	121.	___	___	Donna Sapp
86.	___	___	Jack Little	122.	___	___	Charles Savage
87.	___	___	Kick Lotzgesell	123.	___	___	L. E. Scarr, Ed. D.
88.	___	___	John Maier	124.	___	___	Kenneth W. Schermer
89.	___	___	Robbie Mantooth	125.	___	___	Betty Schuon
90.	___	___	Wayne Mason	126	___	___	Des Sievers
91.	___	___	Marlys Mattila	127.	___	___	Betty Sleeper
92.	___	___	Gary L. McLaughlin	128.	___	___	Donald Sleeper
93.	___	___	Susan McNeeley	129.	___	___	Mary Slehofer
94.	___	___	Dorthy Munkeby	130.	___	___	John Swedstedt
95.	___	___	Blanchard Matte	131.	___	___	John Swingle
96.	___	___	Thomas C. Neal	132.	___	___	Frank Thayer
97.	___	___	Kathy Northrop	133.	___	___	Ned Thomas
98.	___	___	John P. Norton	134.	___	___	Alice Thorne
99.	___	___	James Phillips	135.	___	___	Merton L. Thornton
100.	___	___	Darold L. Powell	136.	___	___	Richard E. Timm
101.	___	___	June Priest	137.	___	___	Barbara Townsend
102.	___	___	Hal Puddy	138.	___	___	Margaret Troyer
103.	___	___	Merrie Quast	139.	___	___	Sherman (Bruce) Webster
104.	___	___	Werner Quast, Ph. D.	140.	___	___	Marilyn Welch
105.	___	___	Helen Radke	141.	___	___	Thomas M. Williams
106.	___	___	George Rains	142.	___	___	Charles Willson
107.	___	___	Robert Reller	143.	___	___	Joseph Wolfe
108.	___	___	Robert Reller	144.	___	___	Dale Woodside
109.	___	___	Betsy Robins	145.	___	___	Floyd Young
				146.	___	___	Rosalind Young

Port Angeles Education Survey

Interview List

January 1, 1975
N = 53

1) Anderson - School Board
2) Biel - Voc. Ed. Director, College
3) Biddinger - Teacher, elementary, P.A. Ed. Assoc.
4) M. Brown - Former School Board Member
5) Buck - Radio Station Owner
6) Collins - Counselor, Sr. High
7) Ducceschi - Managing Editor, newspaper
8) De. Duncan - Teacher, elementary
9) Do. Duncan - Active Citizen
10) Elliot - County PTA President
11) Ellis - Former Superintendent, P.A. School District
12) Feiro - Dean of Students, College
14) G. Grier - Teacher, Sr. High
15) Hare - School Board
16) Hartman - Teacher, Sr. High, P.A. Ed. Assoc.
17) Herring - Radio Station Owner
18) Hesselman - Teacher, Sr. High
19) Horne - Ass't. Supt., P.A. School District
20) J. Kays - Teacher, Sr. High
21) King - Principal, elementary
22) B. Kinney - Fed. Proj. & Reading Coordinator, P.A. School District
23) L. Kinney - Principal, elementary
24) R. Lang - Principal, elementary

25) Maier - President, College
26) Mantooth - Former School Community Relations Coordinator
27) Mason - Principal, Jr. High
28) Mattila - Education writer, newspaper
29) McLaughlin - Teacher, Sr. High, P.A. Ed. Assoc.
30) McNeeley - Teacher, Jr. High, P.A. Ed. Assoc.
31) Munkeby - Ex. Director, Chamber of Commerce
32) Matte - School Board
33) Northrop - School Board
34) Phillips - Bank President
36) Powell - Principal, Jr. High
37) Puddy - P.A. City Manager
38) W. Quast - Professor, College
39) Radke - Real Estate Broker
40) Robins - Active Citizen
41) Rogstad - Plant Mgr., ITT Rayonier
42) R. Ross - Teacher, Jr. High
43) F. Royce - Supervisor, ITT Rayonier
44) Scarr - Superintendent, P.A. School District
45) Schermer - Principal, elementary
46) D. Sleeper - Bus. Mgr., P.A. School District
47) Slehofer - Curriculum Consultant, P.A. School District
48) Thayer - School Board
49) Thomas - Publisher & Editor of newspaper
50) Thornton - Principal, elementary
51) Timm - Principal, elementary
52) Williams - Principal, Sr. High
53) Willson - President, Savings & Loan Assoc.

PORT ANGELES COGNITIVE MAPPING INTERVIEW LIST

1) Duncan, Dorthy	Citizen
2) Northrop	School Board
3) Thayer	School Board
4) Ross, R.	Teacher
5) Mason	Principal
6) Slehofer	Supt.'s Office
7) Hartman	Teacher
8) Kinney, L.	Principal
9) Robins	Citizen
10) Quast	College
11) Hare	School Board
12) Baier	College
13) Scarr	Superintendent
14) Enderle	Special Education
15) Williams	Principal
16) Ellis	Citizen
17) Horne	Assist. Superintendent
18) Timm	Principal
19) McLaughlin	Teacher
20) Kinney, B.	Supt.'s Office
21) Duncan, Dennis	Teacher
22) Thornton	Principal
23) Kays, J.	Teacher
24) Ducceschi	Media
25) Matte	School Board
26) Elliot	Citizen
27) Collins	Teacher

28) Sleeper, D.	Supt.'s Office
29) Mattila	Media
30) Herring	Media
31) Hesselman	Teacher
32) Grier, G.	Teacher
33) Schermer	Principal
34) Norton	Principal
35) Biddinger	Teacher
36) Powell	Principal
37) Feiro	College
38) Bell	College
39) Willson	Business
40) Lang	Principal
41) Buck	Business
42) King	Principal
43) Hoffman, J.	High School Admin.
44) Mausolf	Citizen
45) Brown, M.	Citizen
46) Ress	School Board (New member)
47) Kays, D.	Teacher
48) Granland	Teacher
49) Cornett R.	Teacher
50) Grier, N.	Teacher
51) Kalahar	Teacher
52) Binkie	Teacher
53) McDougal	Teacher
54) Lindelien	Teacher
55) Berkley	Teacher
56) Lamoureaux	Citizen

57) Mantooth	Citizen
58) Ross, L.	City Gov.
59) Basom	City Gov.
60) Crawford	Citizen
61) Thomas	Media
62) Radke	Business
63) Gleason	Teacher
64) McNeely	Teacher
65) Haugge	Citizen
66) Snell	Citizen
67) Lindeneau	Citizen
68) Jewel	Citizen
69) Wehrli	Citizen
70) Wray	City Gov.
71) Haguewood	City Gov.

FOOTNOTES

Chapter II

1. Floyd Hunter, Community Power Structure (Chapel Hill: University of North Carolina Press, 1953).

2. Robert Dahl, Who Governs? Democracy and Power in an American City (New Haven: Yale Press, 1961).

3. Peter Bachrach and Morton S. Baratz, Power and Poverty: Theory and Practice (New York: Oxford University Press, 1970).

Chapter III

1. George A. Kelly, A Theory of Personality: The Psychology of Personal Constructs (New York: W. W. Norton and Company, 1963).

   George A. Kelly, The Psychology of Personal Constructs, Vol. I & II (New York: W. W. Norton and Company, 1955).

2. The reader is directed to the following books and articles as an introduction:

   Steven R. Brown, "On the Use of Variance Designs in Q Methodology," Psychological Record, 20 (1970), pp. 179-189.

   Steven R. Brown and T. D. [illegible]ngs, "Representativeness and the Study of Human Behavior," Social Science Quarterly, 51 (1970) pp. 514-526.

   S.H. Cohen and Richard W. Taylor, "An Experimental Study of the Public Mind: An Application of Q Methodology to a Local Referendum Situation," Experimental Study of Politics (July 1970), pp. 82-117.

   Fred N. Kerlinger, "The Attitude Structure of the Individual: A Q Study of the Educational Attitudes of Professors and Laymen," Genetic Psychological Monographs (1956) pp. 283-329.

Fred N. Kerlinger, "Q Methodology in Behavioral Research," in Science, Psychology, and Communication: Essays Honor-William Stephenson, ed. by S. R. Brown and D. J. Brenner (Teachers College Press, Columbia University, 1972), pp. 3-38.

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